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It gives me great pleasure to present the Department of Otorhinolaryngology – Head & Neck Surgery’s Annual Report 2017. As we prepare to meet the challenges that accompany an ageing population amid a changing healthcare landscape, we see many opportunities to deliver high-value and cost-effective care to our community.

This report showcases our ongoing efforts to develop both our software – maximising each team member’s potential, aligning with the medical profession’s and institutional public service’s ethos, while pursuing world-class excellence in medical care, and hardware – harnessing the latest technology in healthcare processes while evaluating and continuously improving patient care and clinical outcomes.

Key Highlights

The past few years have been exciting and productive for us. Notable achievements include:

- The inauguration of the Integrated Sleep Service in 2009. The multi-specialty service supported by various clinical departments and allied health professionals offers, comprehensive and integrated care to patients with sleep disorders. It was followed by the expansion of the Sleep Laboratory in 2012 and its accreditation by the Australasian Sleep Association in 2016.

- The commencement of Otolaryngology in 2010, offering a one-stop inter-professional service for ear, hearing and balance conditions. The service successfully offered the first adult aural rehabilitation programme for adult cochlear implant recipients in Singapore in 2012. In 2016, the Cochlear Implant Support Group was launched. In the same year, the early cochlear implant switch-on was also introduced.

- The Level of Medical Competency (LMC) for The Facial Plastic and Reconstructive Surgery Service was granted by the Ministry of Health in 2011, allowing functional and aesthetic plastic surgery services in the head and neck in CGH.

- Rhinology Service was introduced in 2013, providing a comprehensive and patient-centric service for patients with complex sinus-nasal conditions. In the same year, the Integrated Airway Service was introduced to facilitate multi-disciplinary management of nose, nasal sinuses and pulmonary care by both ENT Surgeons and Respiratory Physician.

- At the same time, the Head & Neck Surgery Service was formalised and consolidated through close collaboration with general surgeons, endocrinologists, pathologists, radiologists, as well as radiation and medical oncologists. This multi-disciplinary approach provides head and neck cancer patients with the highest standard of care. Managed by strong leadership and supported by a dedicated team of doctors, nurses, allied health professionals and administrators, the department continues to invest in sustainable services to establish a world-renowned reputation in providing safe and efficient patient-centred care. Keeping patients at the centre of all that we do and placing their interest above all else, we apply a systematic approach to improve our performance and clinical outcomes, while simultaneously striving to pursue our goals in providing the right care, at the right time in the most efficient and cost-effective manner.

Focus on Education

We invested heavily in the expansion of our undergraduate and post-graduate programmes in recent years. We were honoured with multiple educator awards for three consecutive years from 2014 through to 2016, as well as the NUS Clinical Training Merit Award 2016 for our unwavering dedication to nurturing and training future generations of professionals and practitioners within the department. Given the immense development of our research capabilities as a result of translational and clinical research, we remained at the forefront of patient care and scientific discoveries.

Beyond our core clinician roles, many of our team members have stepped up to various leadership roles in clinical care, research, education and collaboration appointments, both locally and regionally.

Anchored in the ethos and spirit of the department – Wisdom, Integrity, Compassion and Teamwork – we are committed to continuing the pursuit of knowledge and surgical excellence to improve patient care and clinical outcomes, investing in translational research and innovation, as well as nurturing future generations of doctors.

We will also continue to build on our strong links with prominent institutions of higher learning, medical practitioners and centres of medical excellence in the region. Supported by a network of strong partnerships, we will soldier on in our journey to be on the cutting edge of healthcare, today and beyond.

Sincerely,

Prof Hsu Pon Poh
Chief & Senior Consultant, Otorhinolaryngology– Head & Neck Surgery
Assistant Chairman (Service Development), Medical Board

Changi General Hospital

Leadership Message
OUR DOCTORS

**Integrated Sleep Service**

**Prof Hsu Pon Poh**
MBBS, MD, FRCS (Edin), FRCS (Glasg), FAMS (ORL), G. Dip (Health Mgmt)
Chief & Senior Consultant
Asst. Chairman, Medical Board, Service Development
Adj, Assoc. Prof., NUS Yong Loo Lin School of Medicine
Adj. Prof., Singapore University of Technology and Design
Visiting Prof., Chang Gung Memorial Hospital

**Asst Prof Alvin Tan Kah Leong**
MB ChB, MRCS (Edin), MMed (Surgery), DOHNS, GDOM, MMED (Sleep Medicine)
Principal Staff Registrar
Adj, Assst. Prof., NUS Yong Loo Lin School of Medicine

**Facial Plastic & Reconstructive Surgery Service**

**Asst Prof Loh Chi Yuan Ian**
MBBS, MRCS (Edin), MMed (ORL), FAMS (ORL)
Senior Consultant
Adj, Assst. Prof., NUS Yong Loo Lin School of Medicine

**Dr Lee Tee Sin**
MBBS, MRCS (Edin), MMed (ORL), FAMS (ORL)
Consultant
Clinical Senior Lecturer, NUS Yong Loo Lin School of Medicine

**Rhinology Service**

**Dr Leslie Timothy Koh**
MBBS, MRCS (Edin), MMed (ORL), FAMS (ORL)
Associate Consultant
Clinical Lecturer, NUS Yong Loo Lin School of Medicine

**Dr David Chin Chao Wu**
MBBS, MRCS (Edin), MRCS (Ire), MMed (ORL), FAMS (ORL)
Visiting Consultant

**Dr Gan Eng Cern**
MBBS, MRCS (Edin), MMed (ORL), FAMS (ORL)
Visiting Consultant

**Head & Neck Surgery Service**

**Assoc Prof Lu Kuo Sun Peter**
MBBS, FRCS (Edin), FAMS, ECFMG
Senior Consultant
Deputy Chairman, Medical Board, Surgical
Clinical Assoc. Prof., NUS Yong Loo Lin School of Medicine

**Dr Huang Xinyong**
MBBS, MRCS (Edin), M Med (ORL), FAMS (ORL)
Consultant
Clinical Senior Lecturer, NUS Yong Loo Lin School of Medicine

**Otology Service**

**Assoc Prof Yuen Heng Wai**
MBBS, MRCS, MMed (ORL), DOHNS (England), Dip (Family Med), FAMS
Senior Consultant
Adj, Assoc. Prof., Singapore University of Technology and Design (SUTD)

**Dr David Low Yong Ming**
MBBS, MRCS (Edin), MMed (ORL), FAMS (ORL)
Associate Consultant
Clinical Lecturer, NUS Yong Loo Lin School of Medicine

**General ENT Service**

**Dr Shahrul Izham Ibrahim**
LRCP, LRCS, MB, BCh, BAO, MRCS (Ed)
Senior Staff Registrar
Clinical Lecturer, NUS Yong Loo Lin School of Medicine

**Dr Hu Huixin**
MBBS, MRCS (Edin), MMed (ORL)
Staff Registrar
Clinical Lecturer, NUS Yong Loo Lin School of Medicine
HISTORY, MILESTONES AND ACHIEVEMENTS

Our History

1994

The Department started its humble beginnings by providing General Ear, Nose and Throat (ENT), and Audiology Services with one consultant, Dr Amar Kaur, and a registrar, Dr Aw Chong Yin, in Toa Payoh Hospital. Dr Kaur was subsequently joined by Dr Ronald Brett and A/Prof Peter Lu in Toa Payoh Hospital.

1996

The Service was granted official Divisional status under the Department of General Surgery.

1997

Dr Ronald Brett succeeded Dr Amar Kaur as Division Head.

Aligned with the restructuring plan, the Division of ENT and other clinical departments were relocated from Toa Payoh Hospital to its current location in Changi General Hospital. Prof Hsu Pon Poh joined the growing Division in 1999.

2000

Headship of the Division was passed on to A/Prof Peter Lu, a distinguished leader who continually promotes a culture of clinical excellence, continuing medical education and translational research.

(Clockwise from top)

Dr Amar Kaur (right), Divisional Head and Pioneer of General ENT and Audiology Services in Toa Payoh Hospital in 1994.

Dr Ronald Brett, appointed as the ENT Division Head in 1997.

The ENT Care Team, 1999.
2002
The Division was officially recognised as the Department of Otolaryngology. Provision of specialised Rhinology, Otology, Laryngology, Head and Neck, and Sleep services by fellowship trained specialists became available within the Department.

2009
Prof Hsu Pon Poh was appointed Head of Department. Under Prof Hsu’s tenure as Head of Department, clinical services such as Rhinology, Facial Plastic and Reconstructive Surgery, Adult Hearing Restoration, and Head and Neck Surgery were officially recognised as subspecialty services housed under the Department. The Integrated Sleep Service, equipped with an internationally accredited Sleep Laboratory facility, was also established in CGH in the same year.

2015
The Department was officially renamed the Department of Otorhinolaryngology – Head & Neck Surgery, reflecting the increased range of services provided by the Department.

2017
Today, the Department continues to grow, and is currently supported by 11 permanent clinical staff. It provides complete clinical services across all Otolaryngology – Head & Neck Surgery subspecialties such as Rhinology, Otology, Laryngology, Head and Neck Surgery, Facial Plastic and Reconstructive Surgery, and Integrated Sleep Service. Collectively, the Department has received numerous national accolades and is recognised as a leader in undergraduate and post-graduate medical education.

“CGH Otorhinolaryngology – Head & Neck Surgery believes in the endless pursuit of knowledge and surgical excellence. The department and staff members hold true to its guiding principles – Wisdom, Integrity, Compassion, and Teamwork – in providing excellent patient care, training the next generation of doctors, and achieving advancement in research to improve the clinical care and outcomes in the field of Otorhinolaryngology – Head and Neck Surgery.”
Milestones and Achievements

2000
• Congress Medal Award – 9th Asia-Oceania Otolaryngology, Head & Neck Surgery Congress

2001
• Young Surgeon’s Award – Awarded by the Chapter of Surgeons, Academy of Medicine, Singapore
• Young Investigator’s Award – Awarded by the Academy of Medicine of Malaysia

2003
• Best Research Paper Award (First Prize) – 10th ASEAN Otolaryngology, Head and Neck Surgery Congress, Brunei Darussalam

2008
• SingHealth GCEO Excellence Award (Clinical Research)

2009
• Inauguration of the Integrated Sleep Service (ISS)
  o The ISS provides a comprehensive assessment, diagnosis and treatment service to patients with sleep disorders under one roof

2010
• Commencement of Otology Service
• 15th Yahya Cohen Memorial Lectureship Award

2011
• The Changi General Hospital (CGH) Sleep Laboratory was accredited by the National Association of Testing Authorities of Australia (NATA) in July 2011
• Commencement of the SingHealth Resident Facial Plastic and Reconstructive Surgery training in CGH ENT
• Level of Medical Competency (LMC) for Facial Plastic Service granted by the Ministry of Health to the CGH ENT
• Establishment of the Foundation Surgical Skills Course in Otolaryngology (FSSCO)
  o The first and only such a course in Singapore and Southeast Asia at that time
  o Providing basic foundation in practical anatomy and surgical skills for the Otolaryngologists in ENT surgeries

2012
• Offered the first adult aural rehabilitation programme for adult cochlear implant recipients in Singapore
  o A patient-specific rehabilitation after cochlear implantation for hearing restoration.
• Sleep Laboratory expanded to house six beds and moved to Ward 58 in the Integrated Building
• Conducted the first and only Cochlear Implant (CI) Masterclass in Southeast Asia
• Initiation of Tripartite Craniomaxillofacial Roster
• Facial Plastic & Reconstruction Surgery granted service status by the Medical Board in CGH

2013
• Launch of Rhinology Service
• Inauguration of Integrated Airway Service
• 18th Yahya Cohen Memorial Lectureship Award

2014
• 19th Yahya Cohen Memorial Lectureship Award

2015
• Sleep Laboratory expanded to house six beds and moved to Ward 58 in the Integrated Building
• Conducted the first and only Cochlear Implant (CI) Masterclass in Southeast Asia
• Initiation of Tripartite Craniomaxillofacial Roster
• Facial Plastic & Reconstruction Surgery granted service status by the Medical Board in CGH

2016
• Sleep Laboratory accredited by the Australasian Sleep Association (ASA)
• CI Support Group was launched to empower patients with the know-how as well as to provide team-based support
• Introduction of early CI switch-on

2017
• Received the NUSMed Clinical Training Merit Award
  o The award is bestowed when a clinical department achieves certain targets of posting and teaching scores. With stringent qualification criteria, not many clinical departments qualify for this award
• Achieved the highest programme evaluation scores in the SingHealth Otolaryngology Residency Programmes
  o During the rotation period of July 2015 – June 2017, the department achieved the highest score of the overall ENT programme evaluation ratings
• Received the International Board for Certification in Facial Plastic And Reconstructive Surgery (IBCFPRS)
Providing Quality Patient Care

The otolaryngologists at the Department of Otorhinolaryngology – Head & Neck Surgery are specialists in a wide range of ear, nose and throat (ENT), and head and neck problems. Its doctors are specialists in face, head and neck surgery, sinus and allergy disorders, sleep-disordered breathing, laryngology and voice disorders, hearing loss and ear disorders, and evaluation of dizziness and imbalance.

The department is highly committed to the community it serves. In order to ensure that it will continue to provide the best care to patients and their families, the development of its services is based on patient health needs assessment that is performed regularly by the department. The development of its Integrated Sleep Service (ISS) in 2009, for example, was motivated by fragmented sleep-disorder care in Singapore during that time, despite the rapid growth of individuals who required treatment.

Making A Difference Together

More often than not, patients with otorhinolaryngology, and head and neck problems are presented with multiple and complex medical conditions which require assessments and interventions by various healthcare disciplines. In order to deliver the highest value of care to patients, the importance of heightening partnerships and collaborations is emphasised in all aspects of the department’s services and programmes.

The department believes that it is in its patients’ best interests to receive integrated care from cross-institutional experts.

Breaking down the traditional silos in patient care, key clinical collaborations were adopted across a wide range of our programmes and initiatives by working together with its highly-trained allied health professionals, specialists from other centres of excellence, as well as general practitioners in the community.

2016 – 2017

- **6,916** Inpatient Patient Days
- **24,658** New Cases seen at Specialist Clinics
- **20,967** Surgery Procedures
- **76,428** Outpatient Visits at Specialist Clinics
- **97%** New Patients seen within 60 Days
Making A Difference Together (continued)

The department develops a customised care plan for patients through bringing together a team of experts in the management of head and neck surgery, sleep disorders, hearing and balance disorders, voice and swallowing disorders, thyroid disorders, skull base and sinus surgery, facial plastics and reconstructive surgery, as well as colleagues from other clinical specialties to provide the best evidence from the medical literature, and the latest surgical innovations.

**MULTI-DISCIPLINARY CARE**

The department provides comprehensive and multi-disciplinary care for the diagnosis and treatment of head and neck by collaborating closely with various related specialties and allied health professionals.

- Ophthalmology
- Emergency Medicine
- Oral & Maxillofacial Surgery
- Allied Health Services
- Respiratory & Critical Care Medicine
- Dermatology
- Geriatric Medicine
- Neurosurgery

**CROSS-INSTITUTION APPROACH**

The department adopts a cross-institutional approach to provide coordinated, integrated and seamless patient care to improve quality and access of care and improve patient outcomes. At the same time, healthcare costs are contained as unnecessary service duplications can be avoided.

- General Practitioners
- Family Medicine Physicians
- Referring Specialists

**Co-management of Complex Skull Base Surgeries**

The collaboration between CGH Otology and Neurosurgeons from the National Neuroscience Institute in managing complex skull base tumours and cerebellopontine angle lesions is a pioneering collaborative effort between the two institutions, and is one of the largest programmes of its kind in the region.

The co-management programme is one of the many cross-institutional programmes that the department has developed over the years to provide excellent patient care to each of its patients.

**Integrated Cough & Sinus Clinic**

The Integrated Cough & Sinus Clinic is an initiative which provides care coordination for patients who have medical conditions involving both the upper and lower respiratory tract.

By improving the process of referrals for this group of patients and facilitating the coordination of management between ENT and respiratory specialists, the service aims to minimise time for diagnosis and management, and improve patients’ access to care.

**Facial Plastic & Reconstructive Surgery Multi-Specialty Practice**

The formalisation of the Facial Plastic & Reconstructive Surgery multi-specialty practice allows a close collaboration among the multi-specialties in Dermatology, Oral Maxillofacial Surgery, Ophthalmology and ENT – Head & Neck Surgery to provide a one-stop care centre with a seamless consultation process.

**Partnering KK Women's & Children's Hospital In The Treatment of Paediatrics Otology Patients**

To ensure that CGH’s paediatric patients have access to all-rounded care, a long-standing collaboration between the CGH Otology and KK Women’s and Children’s Hospital was developed to provide young patients with comprehensive multi-disciplinary otology diagnosis and treatment.

**Dr Shahrul Ibrahim performing a laceration repair procedure.**
**OUR SERVICES**

### Integrated Sleep Service

The Integrated Sleep Service (ISS) was formed in 2009 to provide accessible and comprehensive diagnostics and treatment services under one roof.

Due to the highly specialised nature of the service, ISS is well-equipped with the expertise to care for patients with complex and multi-factorial sleep conditions that often require multi-disciplinary approaches.

With cross-institutional expertise, ISS comprises Ear, Nose and Throat (ENT) surgeons, Sleep Physicians, Psychiatrists, Clinical Psychologists, Sleep Technologists, Oral & Maxillofacial Surgeons, Bariatric Surgeons, Endocrinologists and Sports Medicine Physicians.

The Sleep Laboratory was accredited in 2016 by The Sleep Disorders Services Accreditation Program which is jointly run by the National Association of Testing Authorities, Australia and the Australasian Sleep Association. The facility has also collaborated with biomedical and engineering students from the Singapore University of Technology and Design on their final year project in 2017.

The Sleep Laboratory is situated in Ward 58 of the Integrated Building comprising six single-room beds. Over the last few years, the workload has been steadily increasing. Close to 1,000 studies are performed annually, of which, ENT contributed around 80% of the workload.

### Integrated Sleep Service

From left:

**Prof Hsu Pon Poh**  
Chief & Senior Consultant  
Assistant Chairman, Medical Board, Service Development

**Asst Prof Alvin Tan Kah Leong**  
Principal Staff Registrar

### General ENT

From left:

**Dr Shahrul Izham Ibrahim**  
Senior Staff Registrar

**Dr Hu Huixin**  
Staff Registrar

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**6** Beds at Dedicated Sleep Lab

**8** Sleep Technologists

**6** Registered Polysomono-graphic Technologists (RPSGT)

### Annual Fully Attended Studies

<table>
<thead>
<tr>
<th>Year</th>
<th>Studies</th>
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<tr>
<td>2016</td>
<td>878</td>
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<tr>
<td>2017</td>
<td>940</td>
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### Quality Assurance Indicators

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<th>Target</th>
<th>Achieved</th>
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<tbody>
<tr>
<td>Patient Satisfaction</td>
<td>90%</td>
<td>98%</td>
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**Head & Neck Surgery Service**

The Head & Neck Surgery Service specialises in the diagnosis and management of both cancerous and non-cancerous tumours of the head and neck. The service provides a wide variety of medical and surgical treatment for diseases related to the oral cavity (mouth), pharynx (throat), larynx (voice box) and various organs in the neck, including infection, inflammation and lesions in the head and neck. Supported by a highly dedicated multi-disciplinary team, head and neck oncology programmes offer the expertise and advanced technology to treat a wide range of head and neck cancers.

**Evaluation and management of head and neck lumps**
- Salivary glands
  - Parotid gland
  - Submandibular gland
  - Other minor salivary glands
- Thyroid gland
  - Goitres
  - Thyroid nodules
- Cervical lymph nodes

**Evaluation of other head and neck symptoms**
- Evaluation of oral and tongue ulcers
- Persistent epistaxis (nose bleeds)
- Change in voice/hoarseness
- Difficulty swallowing food or drinks
- Unexplained persistent pain in the face/mouth/throat/neck

**Evaluation and treatment of head and neck cancers**
- Oral cavity (mouth)
- Tongue
- Throat
- Larynx (voice-box)
- Nasopharyngeal cancer

**Endoscopic thyroid resection**
- Endoscopic (keyhole) thyroid resection in selected cases, offering shorter recovery and improved cosmetic results.

**Post-resection surgical reconstruction**
- Together with the Facial Plastic & Reconstructive Surgery team, the head and neck surgeons provide seamless surgical reconstructions after resection of head and neck cancers.
- This provides patients with better post-surgery function and better cosmetic results.

**Head & Neck Surgery Service**

From left:
A/Prof Lu Kuo Sun Peter
Senior Consultant
Dr Huang Xinyong
Consultant

**Our Services**

ENT surgeons performing nasal pharyngolaryngo scope procedures. (From left) A/Prof Peter Lu employs a visual method. Dr Hu Huixin uses a video-assisted method.
Otology Service

CGH Otology service provides comprehensive services for all ear, hearing and balance conditions including lateral skull base conditions such as vestibular schwannoma, facial nerve neuroma, jugular foramen tumours and temporal bone malignancy.

The service provides diagnostic, evaluation and treatment for all ear and hearing conditions. The department treats a high number of chronic ear diseases such as cholesteatoama, chronic suppurative otitis media and performs a large number of cholesteatoma surgeries.

It is the first department to focus mainly on hearing rehabilitation and restoration in adults including the full range of hearing implants such as bone anchored hearing implants, middle ear implants, and cochlear implants (CI).

To date, close to 100 patients have benefitted from its CI service since the programme started in 2010. Treatments for paediatric patients are provided by collaboration with the KK Women’s and Children’s Hospital. The CI team consists of experienced professionals from ENT, Audiology, speech therapy and social services. Meetings and discussions are held regularly to provide and maintain the highest standard of comprehensive and holistic care and support to patients with hearing implants. The CI support group which was launched in July 2016, has also empowered CI patients by providing them with information and peer support. It has also encouraged leaders among them to step forward and motivate their peers.

In addition to this, the service holds a weekly Giddiness Clinic which sees patients with complex giddiness and balance problems caused by the ear (vestibular causes). A close collaboration among the surgeons, audiologists and vestibular rehabilitative therapists is the key to this one-stop clinic. All complex conditions are discussed at the National Otology Board to ensure the highest standard of care and outcomes for patients. The department also offers a complete (clinical/audio/vestibular components) and versatile ear and balance service.

Patients are also assessed by a neurologist when the need arises. There are on-going plans to collaborate with the Geriatric Department to see patients with balance and giddiness problems.

Otology Service

From left:
A/Prof Yuen Heng Wai
Senior Consultant
Dr David Low Yong Ming
Associate Consultant

General Otology
- Hearing rehabilitation and restoration in teenagers and adults
- Implantable hearing aids

Vertigo and Tinnitus disorders
- Giddiness and balance problems
- Medical and surgical treatment for vertigo

Audiology
- Audometry
- Auditory brainstem response (ABR) test
- Otoacoustic emission (OAE) test

- Hearing loss assessment
- Lateral skull base conditions
- Chronic ear diseases

- Tinnitus evaluation and rehabilitation
- Tinnitus retraining therapy

- Vestibular (balance) function test
- Hearing aid services
- Tinnitus counselling

Our Services
The Rhinology Service was set up on 27 September 2013 to provide comprehensive and patient-centric service for patients with complex sinonasal conditions or sinonasal operations with complex anatomy. In the same year, objective measurements of nasal airway with rhinomanometry and acoustic rhinometry were introduced, making CGH the first and only hospital in Singapore to offer the service during that time.

The Integrated Airway Service was also introduced to facilitate management of patients with medical conditions involving both the upper and lower airway conditions, where coordinated management by both an ENT and Respiratory Physician is required. Following that, smell assessment using the Sniffin’ Stick Olfactory Test Kit was started in 2014 through a CGH research grant.

Today, the Rhinology Service has expanded to a multi-disciplinary approach with combined case co-management with Ophthalmology (for endoscopic orbital and lacrimal surgery) and Neurosurgery.

The doctors have also been invited to be part of the faculty to the following annual courses:

- Instructional Course fortnight – Singapore General Hospital; as cadaveric dissection supervisors
- Functional Endoscopic Sinus Surgery Course- National Healthcare Group; as cadaveric dissection demonstrators and supervisors
- Singapore Allergy and Rhinology Course (including a dissection workshop); as speakers, moderators and cadaveric dissection supervisors

The Rhinology service was also invited to speak at the Guigang City People’s Hospital Annual Scientific Meeting in 2015.

Rhinology assessment and management
- Rhinitis (Allergic/ Non-allergic Sensitive Nose)
- Rhinosinusitis
- Deviated Nasal Septum (Bent/Crooked Septum)
- Inferior Turbinates Hypertrophy
- Epistaxis (Nose Bleed)
- Sinonasal Tumors
- Smell And Taste Disorders
- Cerebrospinal Fluid (CSF) Leak Repair
- Epistaxis (Nose Bleed) Due To Nasolacrimal Duct (Tear Duct) Obstruction

Rhinology tests and procedures
- Nasoendoscopy (Flexible And Rigid)
- Endoscopic Biopsy Of Sinonasal Lesions
- Endoscopic Hemostasis Of Epistaxis (Treatment Of Nose Bleed)
- Allergy Testing (Skin Prick Test)
- Immunotherapy For Allergic Rhinitis
- Smell Assessment (Research Purpose)
- Rhinomanometry (Research Purpose)
- Functional Endoscopic Sinus Surgery
- Endoscopic Endonasal Surgery For Sinonasal Tumors And CSF Leak Repair
- Endoscopic Dacryocystorhinostomy
- Endoscopiccorbital Decompression For Thyroid Eye Disease

Our Services

Rhinology Service

From left:
Dr Leslie Timothy Koh
Associate Consultant
Dr David Chin Chao Wu
Visiting Consultant
Dr Gan Eng Cern
Visiting Consultant

Functional Endoscopic Sinus Surgery with Image Guidance System
Facial Plastic & Reconstructive Surgery Service

The Facial Plastic and Reconstructive Surgery (FPRS) service in CGH provides functional and aesthetic plastic surgery services in the head and neck under the Otorhinolaryngology – Head & Neck Surgery Department, which includes the correction and restoration of normal head, facial and neck anatomy after Craniomaxillofacial trauma, ablative tumour surgery or congenital deformities.

The service is recognised nationally by the Otolaryngology community as a leading service in this field, and surgeons from the service have been invited as visiting consultants to various national institutions such as Singapore General Hospital, Singapore National Eye Centre, Tan Tock Seng Hospital, Khoo Teck Puat Hospital and Ng Teng Fong General Hospital.

As an academic service, it promotes high standards of knowledge and surgery in the field of FPRS. The service has also received international recognition testament from the many international visitors who have visited the service from the region and beyond.

It strives for clinical excellence in head and neck plastic surgery and is dedicated to provide ethical, high quality, value added care for our patients. The FPRS service is currently in the process of formalising the Facial Plastic and Reconstructive Surgery multi-specialty practice (MSP), a collaborative initiative that brings together various specialties such as ENT – Head & Neck Surgery, Dermatology, Oral Maxillofacial Surgery, as well as Oculoplastic Service within the Department of Ophthalmology.

The collaborations empower patients to have a seamless consultation process within the same visit to address their medical concerns. This was previously not possible as patients often required multiple visitations to various services to complete the consultative process.

With the formation of the MSP, operative expertise, resources and facilities can now be shared, allowing the patient to have the most appropriate physician to address their various medical needs and expediting waiting times for procedures and surgeries.

Facial Plastic & Reconstructive Surgery Service

From left:
Asst Prof Loh Chi Yuan Ian
Senior Consultant
Dr Lee Tee Sin
Consultant

Driven by its commitment to continuously discover viable ways to improve patient care delivery in the evolving healthcare landscape, the FPRS Service has established clinical fellowships in the following Academies:

- Korean Academy of Facial Plastic and Reconstruction Surgery (KAFPRS)
- Taiwan Academy of Facial Plastic and Reconstruction Surgery (TAFPRS)
- American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS)

Rhinoplasty

- Performed more than 200 rhinoplasties since 2010
- Have one of the highest surgical loads for functional rhinoplasties in Singapore
- Capability to handle complex cases – received referrals from other restructured hospitals, as well as local and international healthcare providers

Craniomaxillofacial (CMF) Trauma

- Coordinating the CMF trauma roster in CGH
- Involves Oral Maxillofacial Surgery, Plastic and Oculoplastic Services

(From left) Adj Asst Prof Sunny Shen, Deputy Head, SNEC Eye Clinic @ CGH and members of the FRPS service are committed to maintain a close partnership to provide seamless Oculo-Facial Plastic Surgery Service.
**GOLD STANDARD OF CARE**

CGH Otorhinolaryngology – Head & Neck Surgery Department is committed to improve the overall population’s health care and quality of life by enhancing the application of its patient care delivery.

For it to happen, the department seeks excellence and continuous improvement at each point of its patient care deliveries, which also serve as success models benchmarked in the Otorhinolaryngology – Head & Neck Surgery field in Singapore and the ASEAN region.

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**Fast Track For Big Boy Pathway In Integrated Sleep Service Management**

The Ear, Nose and Throat department is a key member of the Big Boys Pathway which involves collaboration between the department of anaesthesia and all the surgical departments in CGH. It is a standard protocol that patients scheduled for surgery or endoscopy procedures under anaesthesia or sedation have to be screened for any sign of Obstructive Sleep Apnoea (OSA).

If the patients are found to be at risk of OSA, these patients will be referred to the ENT Department where the OSA assessments will be conducted, before they can be started on treatment prior to their procedure. These are important to help stabilise patients’ OSA condition and minimise the risk of anaesthesia/ sedation due to OSA.
Facial Plastic & Reconstructive Surgery’s Administration & National Policy Planning Leadership

CGH Otorhinolaryngology – Head & Neck Surgery Department holds representative positions in national bodies regulating the practice of aesthetic surgery. The Department sits in the Singapore Medical Council’s Aesthetic Practice Oversight Committee (APOC) Focus Group and the Academy of Medicine, Singapore (AMS) Taskforce on Aesthetic Medical Practice.

The department also spearheaded the formation of the FPRS sub-committee within the Chapter of Otolaryngologists in the AMS.

FPRS has representation in committees of various international FPRS bodies including:
- ASEAN Academy of Facial Plastic and Reconstructive Surgery
- Pan Asia Academy of Facial Plastic and Reconstructive Surgery (PAAFPRS)
- Asian Facial Plastic Surgery Society (AFPSS).

Adult Aural Rehabilitation Program For Adult Cochlear Implant Recipients

Established in 2012, the patient-specific rehabilitation after cochlear implantation for hearing restoration was the first such programme to be offered in Singapore.

While most other centres apply auditory-verbal therapy principles that are more suitable for paediatric implant recipients, CGH is among the firsts to develop and set-up specialised training and aural rehabilitation programmes for adult cochlear implant recipients.

CGH Tinnitus Counselling Clinic

The CGH Tinnitus Counselling Clinic (TCC) is provided by dedicated full-time tinnitus counsellors. Tinnitus can impact one’s quality of life and in some instances, be extremely disabling. One way to manage patients who are severely affected by tinnitus is counselling.

TCC helps to minimise the impact of tinnitus on a patient’s life. In 2010, it developed a unique protocol designed to:
- Assess the severity of the tinnitus using the Tinnitus Handicap Inventory;
- Educate patients to have a better understanding of tinnitus and;
- Impact necessary skills for self-help strategies to cope with tinnitus.

Our tinnitus works have active involvements in the local and global international tinnitus conferences and networks.

Gold Standard of Care
The Department of Otorhinolaryngology – Head & Neck Surgery took part in CGH’s Internal Patient Satisfaction Survey in 2016 to gain a better understanding of patients’ experiences and learn about the opportunities to improve our quality of care.

The graph on the right shows the percentage of Otorhinolaryngology – Head & Neck Surgery patients indicating their satisfaction level on several aspects of their care such as staff’s knowledge and skills, care and concern, clarity of explanation and care coordination.

About 80% of the respondents and caregivers who responded to the survey rated the service provided by the department between Excellent and Good.

**PATIENT SATISFACTION SURVEY**

80%
Overall percentage of respondents rated their overall satisfaction levels
*Excellent & Good*

"We are impressed with the service quality provided by the staff at the clinic"

"Doctors are very knowledgeable regarding patient's condition and provided good treatment"

"Doctor and nurses are professional and caring in providing care"
AWARDS AND RECOGNITION

Clinical Care Awards

- 2014 • EHA/ CGH Caring Award – Silver
  • CGH Quarterly Best Service Award
- 2016 • Changi General Hospital Distinguished Senior Clinician Award
  • CGH Wow Award (Patient Compliment)

Educator Awards

- 2014 • NUS Medicine (YLLSOM) Best Educator Award
  • Changi General Hospital Best Educator Award
  • RISE Awards (Best Residency Faculty for Otolaryngology)
  • NUS Medicine Best Educator Award – FPRS Service
- 2015 • NUS Medicine (YLLSOM) Best Educator Award
  • EHA/ CGH Best Educator Award – Undergraduate Category
  • EHA/ CGH Best Educator Award – Post-Graduate Category
  • RISE Awards (Best Residency Faculty for Otolaryngology)
- 2016 • Changi General Hospital Best Educator Award – Medical Category
  • Changi General Hospital Young Educator Award
  • RISE Awards (Best Residency Faculty for Otolaryngology)
  • NUS Medicine Best Educator Award – Distinguished Senior Clinician Award

A/Prof Peter Lu receiving the EHA/ CGH Distinguished Senior Clinician Award 2016 presented by President Tony Tan.

Presentation of Changi General Hospital Young Educator Award 2016 by Mr Gan Kim Yong, Minister for Health.
The Yahya Cohen Memorial Lectureship is awarded every year by the College of Surgeons Academy of Singapore for the best scientific paper across all surgical disciplines.


**2010** 15th Yahya Cohen Memorial Lectureship Award for the best scientific paper titled: *The Relationship Between the Air-Bone Gap and the Size of Superior Semicircular Canal Dehiscence* by A/Prof Yuen Heng Wai.

**2013** 18th Yahya Cohen Memorial Lectureship Award for the best surgical paper titled, *The Outside-In Approach to the Modified Endoscopic Lothrop Procedure* by Dr David Chin.

**2014** 19th Yahya Cohen Memorial Lectureship Award for the paper titled, *Five-degree, 10-degree, and 20-degree reverse Trendelenburg position during functional endoscopic sinus surgery: a double blind randomised controlled trial* by Dr Gan Eng Cern.
NUSMed Clinical Training Merit Award

The NUS Yong Loo Lin School of Medicine has recognised the ENT department’s excellence in teaching with the NUSMed Clinical Training Merit Award in October 2017. The award is accorded when a department achieves certain targets of posting and teaching scores. It is an acknowledgement of the department’s leadership in driving the undergraduate programme in ENT at CGH.

Annals’ Gold Reviewer Award

Presented by the Academy of Medicine, Singapore in 2017. The Annals is the official medical journal of the Academy of Medicine, Singapore.

Academic Excellence Award

Dr Lee Tee Sin was honoured with the Claus D. Walter Award for Academic Excellence at the American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS) Fall Meeting in September 2014 for achieving the highest score among the International Candidates on the 2014 certifying examination.

A CENTRE FOR LEARNING AND COLLABORATION

The CGH Otorhinolaryngology – Head & Neck Department, puts in the right investments in development and education to ensure the delivery of excellent healthcare to its patients. The expansion and quality improvement of its undergraduate and post-graduate programmes is a result of the team’s unwavering dedication to building the future generations of ear, nose and throat (ENT) specialists.

The department has been honoured with various educator awards, a stamp of recognition on its excellence in clinical education programmes. It also works closely with medical institutions in the region to create sustainable continuous medical education environments to address the medical and healthcare needs of our time.

Awards and Recognition

(From left) Assistant Chief Executive Officer Selina Seah (CGH), Chief Executive Officer Prof Lee Chien Earn (CGH), Superintendent Prof Chen Choa-Long (Chang Gung Memorial Hospital, Taiwan), Chairman Gerard Ee (CGH), Assistant Chairman Medical Board Prof Hsu Pon Poh (CGH), Chairman Medical Board Prof Teo Eng Kiong (CGH) during a best practice exchange visit to Chang Gung Memorial Hospital, Taiwan.

Department of Otorhinolaryngology – Head & Neck Surgery.
The department has established its capability standing globally. It has received numerous requests from local and international visitors and fellows to visit the hospital to benchmark the department’s standard of care and expertise through various post-graduate clinical programmes.

Residency Programmes

The department’s residency programmes offers a well-rounded, stimulating learning experience in its various Otorhinolaryngology – Head & Neck Surgery services.

The Facial Plastic and Reconstructive Surgery (FPRS) service, for example, has organised the most teaching modules for FPRS in the National Otolaryngology Residency programme amongst all institutions to date. The Rhinology Module of the Ear, Nose and Throat residency programme has also been offered by the department since 2013.

The department has consistently received the Top Performer Faculty ratings among the physician faculty in the SingHealth Otolaryngology Residency Programmes. During the rotation period of Jul 2015 – June 2017, the department achieved the highest score of the overall ENT programme evaluation ratings with a rating mean of 4.60 out of 5.

Post-graduate Programmes

The department has established its capability standing globally. It has received numerous requests from local and international visitors and fellows to visit the hospital to benchmark the department’s standard of care and expertise through various post-graduate clinical programmes.

Accolade...

“...The ENT posting to CGH is excellent. It is well balanced in terms of service provision and learning needs. There is more than ample learning opportunities in terms of formal sessions within the department as well as on the job teaching / learning in clinics and in the operating theatre.

I find the operative exposure and opportunity to operate with the faculty’s supervision and guidance is something that has been very useful and indispensable in my training.

I also want to highlight this because of the excellent job that the faculty has done --- they have obviously put in a lot of effort and are very passionate and committed to training the residents, ensuring that we have adequate surgical exposure and grooming us to operate competently. In clinics, they also play an active role in pointing out subtle nuances in certain physical findings/clinical scenarios and still find opportunities to teach, e.g. finer points of scope handling, managing of more complicated post-surgery cases.

Overall, I find that wherever I am at CGH, I am constantly growing and learning in a culture which is highly supportive and very encouraging.”
Foundation Surgical Skills Course in Otolaryngology

First started in 2010, the Foundation Surgical Skills Course (FSSC) was the first and only of its kind to be introduced in Singapore and Southeast Asia.

The course was conceptualised to provide a strong basic foundation in practical anatomy and surgical skills for Otolaryngologists. It has been well received locally and regionally.

Today, the course marks its 7th year running. The 2017 FSSCO was held over a period of nine days in February 2017, covering interactive and practical sessions on Rhinology, Facial Plastic & Reconstructive Surgery, Head & Neck Surgery, Laryngology, and Otology.

The teaching faculty consists of experienced subspecialists within the respective fields from all over Singapore who have undergone fellowship trainings at various world-renowned centres.

The programme is designed to highlight pertinent pointers in surgical dissection, allowing participants to experience cadaveric dissection.

To ensure participants from all levels of surgical background benefit from this course, a high instructor to participant ratio is committed to allow close supervision and interaction during the cadaveric dissection.

Faculties and participants – 7th Foundation Surgical Skills Course in Otolaryngology in 2017
**Nursing and Allied Health Professional Development**

The department plays a pivotal role in supporting the enrichment and development of clinical skills of its nurses and allied health professionals. Nursing and allied health constantly strive to improve care for patients in the areas of ear, nose and throat, and head and neck health through patient care transformation, collaborations, research and education.

**Cochlear Implant Masterclass**

The Cochlear Implant (CI) Masterclass, an advanced hands-on temporal dissection course focused on cochlear implant surgery, was developed by the Otology Service in 2015. The first of its kind in Southeast Asia and conducted with this focus, it has seen the participation of surgeons from around the region including: Malaysia, Indonesia, Vietnam, Cambodia, Thailand and Taiwan.

This course was held together with renowned international CI surgeons as faculty and has received strong positive feedback. The most recent course was conducted in March 2017.

**Audiology Training Site And Clinical Attachments**

The Otology service has established itself as a leading teaching and learning site for audiology trainings. It served as a training site for the Singapore Military Medical Institute for Audiological Technical training, and the University of Hong Kong’s audiological students.

CGH has been invited to many regional and international conferences and workshops to share its experience and expertise with other Otology surgeons in the region.

These include the Singapore General Hospital ENT Fortnight, the ASEAN ORL Congress, the University of Hong Kong ENT Scientific Meeting, and the Australian Society of Otolaryngology – Head & Neck Surgery Annual Scientific Meeting.

**GP Symposiums**

The department conducts regular GP Forums and Continuous Medical Education events to share the latest development in Otorhinolaryngology – Head & Neck Surgery in order to strengthen the engagement and build on partnerships with primary care providers in Singapore.
Leader in Clinical Education for Facial Plastic & Reconstructive Surgery

The Facial Plastic and Reconstructive Surgery (FPRS) service has been actively involved in building up the FPRS Surgeons’ expertise and skills in Facial Plastic and Reconstructive Surgery in Singapore and beyond through a wide range of initiatives such as:

**Soft Tissue Handling and Reconstruction Course**
The course teaches the techniques of soft tissue repair and locoregional reconstruction within the head, face and neck.

**Craniomaxillofacial Trauma Course**
A hands-on course that allows participants to acquire skills to repair facial skeletal trauma through the usage of synthetic skulls.

**Foundation Surgical Skills Course in Otolaryngology (FSSCO) Facial Plastic Module**
A cadaveric dissection course to familiarise participants with the facial anatomy in Facial Plastic and Reconstructive Surgery.

**FPRS Residency Programme**
The FPRS Residency Programme is held annually by the FPRS service. The sole participating service for the SingHealth FPRS residency with excellent teaching scores and feedback, the FPRS Faculty has garnered various teaching awards over the last few years.

The FPRS service has been invited to teach in numerous overseas conferences as well as to speak in the following countries:

- Rhinology World Congress, Hong Kong, 2017
- Asian Rhinoplasty Discussion Panel in Rhinology World Congress, Hong Kong, 2017
- Dr Lee Tee Sin and Asst Prof Ian Loh speaking at ENT World Congress in Paris in 2017
- 4th Ipoh Septorhinoplasty Course, Malaysia, 2017
- 7th Asian Facial Plastic Surgery Society Congress in 2016
INTEGRATING PRACTICE WITH RESEARCH AND INNOVATION

“We have expanded our translational research programmes and development in healthcare innovations to pursue breakthroughs in medical advancement and to discover new treatment and cures.”

The CGH Otorhinolaryngology – Head & Neck Surgery publishes its work on research, innovations, healthcare technology, and clinical care regularly.

Published Papers

Research and Innovation Grants

275

62

CGH and SUTD have deepened their collaboration with the launch of a joint laboratory to enable ideation and conduct of classes under the joint curriculum co-developed by both institutions. The Memorandum of Understanding (MOU) for the joint laboratory was signed on 30 November 2017.

In the SUTD-CGH collaboration, the department of Otorhinolaryngology – Head & Neck Surgery plays an active role in developing solutions for better healthcare delivery, nurturing future generations of healthcare engineers, and cultivating healthcare innovation in Singapore and beyond.

Together with the CGH International Liaison Unit, the department visited Seoul National University, Yonsei University Health System, and Korea University Anam Hospital in November 2017. The visits aim to foster stronger partnership ties with the leading universities and hospitals in Korea.

To mark a new era for collaboration, an MOU for good practices exchanges in areas such as clinical care, research and education was signed between CGH and Yonsei University Health System during the visit.
The department of Otorhinolaryngology – Head & Neck Surgery believes teamwork is vital to the success of the department. As one of CGH’s core values, it emphasises the team’s belief in working together cohesively and collaboratively to bring out the best for their patients and department.

The department organises regular activities to create opportunities for interaction outside work. It helps the team to foster closer bonds and improve the team’s performance.
MEDIA ENGAGEMENT

The CGH Otorhinolaryngology – Head & Neck Surgery team strives to keep the public informed on the latest developments and updates in the area of their expertise. The team’s opinions are often sought by the media. The following are selected highlights of the media coverage.

**Television & Radio**
- Mediacorp Channel 5
  - Health Impulses
  - Living in Golden Age
  - TV Interviews
  - Body and Soul
- Mediacorp Channel 8
  - Good morning Singapore
  - Morning Express "善方保健"
- Channel U
  - TV Interview ‘Yi Yao Tian Di’
- Overseas TV Programme
  - Metro TV (Indonesia National TV)

**Newspaper & Magazine**
- The Straits Times
- Lianhe Zaobao
- Lianhe Wanbao
- Shin Min Daily
- Berita Harian
- The New Paper
- Sinchew news
- Today
- My Paper
- Borneo Post Malaysia
- Female (Indonesia)
- Men’s Health
- Health No. 1
- CGH’s Caring Magazine

Department’s End of Year Celebration - 2017

The department holds the annual end of the year gathering as a token of appreciation to thank the Care Team for all their efforts in pursuing world-class excellence in medical care and continuously improving patient care and clinical outcomes.

Choir performance by the CGH ENT Residency Team.