



JOINT NEWS RELEASE

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NTU Singapore partners local hospitals in setting up Singapore Severe Asthma Registry to tackle severe asthma; joins global registry

A research network formed by **Nanyang Technological University, Singapore's (NTU Singapore) Lee Kong Chian School of Medicine (LKCMedicine), Changi General Hospital (CGH), Singapore General Hospital (SGH), and Tan Tock Seng Hospital (TTSH)** has set up the **Singapore Severe Asthma Registry (SSAR)**, the first of its kind in the country.

This national registry also joins the **International Severe Asthma Registry (ISAR)**, making it the largest international research collaboration in the history of respiratory medicine in Singapore.

The SSAR is the first multi-centre, large-scale registry of severe asthma patients in Singapore. It aims to improve understanding of severe asthma, collect evidence of treatment effectiveness and safety, and identify predictors of treatment success.

The registry will be managed by **The Academic Respiratory Initiative for Pulmonary Health (TARIPH)**, a research network spearheaded by NTU's LKCMedicine.

Co-Chair of TARIPH and LKCMedicine Assistant Dean (Faculty Affairs) **Associate Professor Sanjay H. Chotirmall**, Provost's Chair in Molecular Medicine, said: "Severe asthma affects one in 20 individuals with asthma. This group of patients experience higher treatment burden and differing clinical trajectories, necessitating us to evaluate if and how Asian patients may be different and whether there are better ways to manage and treat this important condition."

"Developing a national registry of this kind fulfils a key mission of TARIPH to bring

research to patients through partnerships. Being part of an international registry gives us rich data upon which to improve outcomes for Singaporeans with severe asthma,” said **Assoc Prof Chotirmall**.

Associate Professor Mariko Koh, Senior Consultant in the Department of Respiratory and Critical Care Medicine at SGH, chairs the SSAR workgroup within TARIPH.

Assoc Prof Mariko Koh said: “SGH has over the years piloted various initiatives to improve asthma care for patients, especially those with severe asthma, as a number of them return frequently to the Emergency Department when they get an attack. Like other chronic respiratory diseases, severe asthma presents differently across patients in its underlying inflammation and response to treatment. There is no one treatment or intervention that works for all patients. The formation of SSAR will not only enable us to find better ways to deliver more personalised, targeted, and effective treatment plans for patients, but we will also better understand the burden of severe asthma in Singapore and introduce interventions to address issues at a systemic level.”

Professor Joseph Sung, NTU’s Senior Vice President (Health and Life Sciences) and Dean of NTU’s LKCMedicine, said: “This joint initiative by LKCMedicine and the hospitals across Singapore to advance research into severe asthma is timely as the burden of disease is high. By partnering with hospitals and respiratory medicine specialists to set up the Singapore Severe Asthma Registry, we can find better solutions to treat severe asthma. At the same time, the Registry gives us a unique opportunity to look at how severe asthma affects the Asian population differently, thereby leading to strategies tailored for our population.”

Associate Professor John Arputhan Abisheganaden, Head and Senior Consultant in the Department of Respiratory and Critical Care Medicine at TTSH and TARIPH’s co-chair, said: “The Singapore Severe Asthma Registry will go a long way towards identifying asthma patients who are at high risk, and providing us with deeper insights from bench to bedside in improving the care and management of these patients. Linking up with the international registry will also help enhance our global perspective and understanding of the condition in the Singapore context.”

Adjunct Associate Professor Augustine Tee, Deputy Chairman Medical Board (Medical) and Senior Consultant, Department of Respiratory & Critical Care Medicine at CGH, said: “The Singapore Severe Asthma Registry will greatly enable healthcare professionals to study the characteristics of people with severe asthma locally. As our public hospitals become more involved in improving the population health of Singaporeans, new insights gathered from this collaboration will be useful in managing patients with severe asthma in the community. Registry data of this prevalent disease will help enhance detection and personalise effective asthma treatments to enhance the quality of life of people with severe asthma. Being part of the International Severe Asthma Registry provides local clinicians and scientists with the opportunities for

international collaborations in asthma and other respiratory diseases.”

Collating data to study different severe asthma patient demographics

Set up in April 2022, SSAR aims to understand the burden of severe asthma in Singapore, address clinical and knowledge gaps of severe asthma, reduce complications and improve care and outcomes. The real-world evidence gathered has the potential to inform policy decision-making and guideline implementation.

The registry has collected data from 139 severe asthma patients to date and aims to register 200 patients by the end of the year. The data collected, which is anonymised, includes demography, medical history, exacerbation history, treatment plan and biomarkers such as lung spirometry test results, full blood count and other clinical parameters.

Crucially, the researchers will be able to compare the data of Asian patients with non-Asian patients from other countries.

“Current clinical guidelines for treatment have been derived from evidence predominantly from non-Asian patients,” said **Assoc Prof Chotirmall**. “There is emerging evidence from a range of lung diseases that Asian and non-Asian patients respond differently to treatment and have lung diseases that behave differently. This is likely due to differences in genetics, environmental exposures (such as allergens, air quality and climate), health-seeking behaviours, and practices in health systems.”

TARIPH researchers can tap on SSAR’s data to address important research questions in severe asthma, improve early diagnosis for patients and promote best practices in severe asthma care.

One key research focus is the choice of treatment for severe asthma patients. An area of concern is the high oral corticosteroid use among severe asthmatics in Singapore.

Oral corticosteroids are commonly used for acute asthma flare-ups and as maintenance for patients with severe asthma. However, long-term and frequent oral corticosteroid use is associated with side effects such as the development of diabetes, osteoporosis, and kidney disease, along with increased risk of heart attack, strokes, pneumonia, and glaucoma.

Through the data collected, the researchers aim to understand how the high oral steroid usage is affecting the local severe asthmatic population and identify ways to minimise steroid burden and reduce complications.

Other research topics to be investigated include determining the predictors of treatment success, outcomes of personalised therapies, the use of biologics for

treatment, and studying undiagnosed severe asthma in primary care.

Information sharing across researchers from 26 countries

The new Singapore registry will be part of the **International Severe Asthma Registry (ISAR)**, the first global partnership of researchers from 26 countries. Each national registry shares their data with the ISAR for research in understanding how severe asthma affects patients differently in different geographical populations.

The joint initiative allows national registries to retain ownership of their own data while sharing data with ISAR for ethically approved global research. By being part of ISAR, researchers and clinicians from TARIPH can tap on data from other countries for comparison of patient characteristics and responses to treatment in Singapore with patients in other countries.

The ISAR is one of the many efforts by the Observational and Pragmatic Research Institute (OPRI), an academic research institution based in Singapore that strives to improve the lives of patients through real-life research.

“I am delighted by SSAR’s collaboration with ISAR,” said **Professor David Price**, the Director of OPRI Singapore who leads the ISAR. “It is going to be an incredible step towards the advancement of severe asthma research on a global scale and I cannot wait to see the addition of Singaporean perspectives to our current knowledge.”

“With their rigid settings and strict inclusion/exclusion criteria, clinical trials could exclude the average patient. This is why registries such as SSAR and ISAR are so important. Their extensive data bridges the gap between clinical trials and the real world. With data from 12,772 patients from 26 countries, ISAR has offered real-life findings and insights that clinical trials have missed. By joining ISAR, SSAR will enter a mutually beneficial relationship where it can add to and benefit from ISAR’s research.”

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Media contact:

Mr Lester Hio
Manager, Media Relations
Corporate Communications Office
Nanyang Technological University, Singapore
Email: lester.hio@ntu.edu.sg

Ms Jillin Lim
Manager, Media and Publications
Corporate Communications Department
Changi General Hospital, Singapore
Email: Jillin_Lim@cgh.com.sg

Ms Carol Ang
Senior Manager, Communications
Singapore General Hospital
Email: carol.ang@sgh.com.sg

Ms Jasmine Chia
Senior Executive
Communications
Tan Tock Seng Hospital
Email: jasmine_cy_chia@ttsh.com.sg

About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

Ranked amongst the world's top universities, the University's main campus is also frequently listed among the world's most beautiful. Known for its sustainability, over 95% of its building projects are certified Green Mark Platinum. Apart from its main campus, NTU also has a medical campus in Novena, Singapore's healthcare district.

For more information, visit www.ntu.edu.sg

About Changi General Hospital, Singapore

Changi General Hospital (CGH) is an academic medical institution caring for more than 1 million people in Singapore. A tertiary referral centre with over 1,000 beds, CGH is committed to medical research and education, clinical innovation and care for patients through a comprehensive range of medical specialties and services. Helmed by a multi-disciplinary, dedicated team of healthcare professionals, CGH consistently delivers positive health outcomes for patients.

For more information, visit www.cgh.com.sg

About Singapore General Hospital

Singapore General Hospital, a member of Singapore Health Services, is the public sector's flagship hospital. Established in 1821, SGH is Singapore's largest acute tertiary hospital with 1,700 beds and national referral centre offering a comprehensive range of more than 40 clinical specialties on its campus. Every year, about 1 million Singaporeans benefit from medical care delivered by its 800 specialists. As an academic healthcare institution and the bedrock of medical education, SGH plays a key role in nurturing doctors, nurses and allied health professionals, and is committed to innovative translational and clinical research in her continual strive to provide the best care and outcomes to her patients. www.sgh.com.sg

About Tan Tock Seng Hospital, Singapore

Tan Tock Seng Hospital (TTSH) is the flagship hospital of the National Healthcare Group and part of Singapore's Public Healthcare System. As a pioneering hospital with strong roots in the community for over 178 years, TTSH is recognised as the People's Hospital, serving a resident population of 1.4 million living in Central Singapore. Together with 70 community partners and 80 community health posts, it brings care beyond the hospital into the community as an integrated care organisation – Central Health.

As one of the largest multi-disciplinary hospitals in Singapore, TTSH operates more than 1,700 beds with centres of excellence including the National Centre for Infectious Diseases (NCID), Institute for Geriatrics & Active Ageing (IGA), NHG Eye Institute (NHGEI), and TTSH Rehabilitation Centre. www.ttsh.com.sg