

SingHealth, Duke NUS and GSK to conduct large-scale big data study on asthma and COPD

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Three-year study to collect and analyse data from 13,000 respiratory patients per year to improve and predict care outcomes for asthma and COPD.



Singapore – A team of clinicians and researchers from the SingHealth Duke-NUS Academic Medical Centre (AMC) and GSK are embarking on a three-year real-world data collaboration in Singapore. Involving about 13,000 respiratory patients a year, the project seeks to enhance clinical decision-making and improve the care of asthma and chronic obstructive pulmonary disease (COPD) patients in Singapore.

This \$1.2 million study funded by GSK aims to create an integrated real-world data ecosystem for research into respiratory diseases by accelerating the digitization and integration of medical records of asthma and COPD patients. The data will be used to create digital tools for deployment to healthcare institutions like the Singapore General Hospital (SGH) and SingHealth Polyclinics to improve respiratory patient care and optimize treatment options. The healthcare institutions can also use these results to prioritize programmes and target areas that will improve patient outcomes and deliver cost-effective results.

Asthma and COPD – the need for research

Singapore has one of the highest asthma prevalence rates in the world, with around one-in-five children and five per cent of adults diagnosed with the condition. Singapore's asthma mortality rate is also three times that of other developed countries like the United States and New Zealand. This can be attributed to a variety of factors such as under-reporting of symptoms, poor adherence to treatment or inadequate self-management.

"Asthma and COPD can be life-threatening if not managed properly, but with the right interventions and management, complications and deaths are preventable and patients can enjoy a good quality of life," said Associate Professor Loo Chian Min, Chief Medical Informatics Officer, SingHealth and Senior Consultant, Department of Respiratory and Critical Care Medicine, SGH. "A study of this size should give us ample data to analyze so that we can improve the care management and clinical outcomes of these two chronic respiratory conditions for our patients."

With the data, the team will create electronic dashboards with key metrics to track asthma and COPD management, and real-time data linkages will also be used to create dynamic readmission risk models and predictive analytics. This will enable healthcare professionals to predict outcomes and risks to enable timely clinical intervention and patient education. For example, doctors will be able to identify high risk asthma or COPD patients and provide more intensive or tailored treatment for these groups.

This study is also the SingHealth Duke-NUS Health Services Research Institute's (HSRI) first large-scale public – private research collaboration. The institute aims to integrate cutting edge health services research into the Singapore health system.