

## MEDIA RELEASE

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### **NEW BOOK OFFERS INNOVATIVE APPROACH TO MINIMALLY INVASIVE CARDIAC SURGERY AND INTRODUCES A NEW EDUCATIONAL CONCEPT**

***Edited by eminent cardiac surgeon Associate Professor Theo Kofidis, the practical guide presents a disruptive learning experience while teaching Minimally Invasive Cardiac Surgery***

Singapore - A novel book concept and educational paradigm offered in the form of a practical guide in Minimally Invasive Cardiac Surgery (MICS) was launched at an event held at the National University Heart Centre, Singapore (NUHCS) today. The book, titled “Minimally Invasive Cardiac Surgery – A Practical Guide”, covers a myriad of complex surgery techniques and aims to impart the latest knowhow and skills for practicing cardiologists, heart surgeons, perfusionists and nurses. This is done via a totally novel educational platform that unfolds interactively, using QR codes, for the first time in printed surgical education.

Studies have shown that patients who underwent MICS have a faster recovery as compared to traditional surgeries. This is largely due to smaller incisions, less trauma to the body and less blood loss, which lead to decreased length of hospital stay. Therefore, patients are able to resume their daily activities and mobility sooner. The National University Health System (NUHS) has established MICS as a Peak of Excellence programme over the last few years, which is now crowned by a global educational tool.

The main author and editor of the book, Associate Professor Theo Kofidis, Head and Senior Consultant, Department of Cardiac, Thoracic and Vascular Surgery, NUHCS and Associate Professor, Department of Surgery, Yong Loo Lin School of Medicine, National University of Singapore said: “As a teaching resource, reference book and manual written by surgeons who both operate and teach the procedures described within, this book is a culmination, and indeed the crown jewel, of many years of dedication to minimally invasive heart procedures. Minimally invasive cardiac surgery is an integral component of every future cardiac surgeon’s training, and we hope that the book will be an invaluable guide as it covers the latest research, trends and innovations in the field.”

#### *An Innovative Approach*

Published by Taylor & Francis Group, *A Practical Guide* introduces a new educational concept in medical education, with the extensive use of QR code technology. The book features more than 100 QR codes within its pages. Readers can scan the QR code as they read each paragraph and they will be transferred to a collection of essential audio-visual material, which along with didactic texts focuses on the practical aspects of MICS where readers can access and see how heart surgery procedures are performed. They will get to learn valuable clinical

advice, tips and tricks, alternatives and controversies to various approaches, as well as where and how to go for further training. The chapters in the book are laid out in a way that the readers can refer to resources online on the types of instruments to use, footages of surgery, conference and events, and alternative techniques to learn.

“This is a content-rich book designed for our times and it may form the foundation for more medical books to follow in the future,” added A/Prof Kofidis.

### *How to Set Up a Minimally Invasive Programme*

Globally, there continues to be a growing demand for less invasive surgical techniques to treat patients. However, less invasive techniques are often complex and require special skills and knowhows.

Beyond providing detailed surgical approaches, *A Practical Guide* includes a chapter with a step-by-step guide on establishing a minimally invasive cardiac programme. This is especially important for practitioners in developing countries, where there is less expertise and experience in offering such a programme.

Associate Professor Kofidis said: “As minimally invasive cardiac surgery is a growing discipline around the world, we hope that the book will be a valuable resource to aid surgeons in other countries in establishing or improving their MICS programme, offering patients around the globe the option of less traumatic heart surgery.”

### *About the Author*

Associate Professor Theo Kofidis is a renowned cardiac surgeon who has introduced various new technologies and techniques in minimally invasive surgery. Over the last 10 years in Singapore, he has established the most comprehensive and advanced Minimally Invasive Cardiac Surgery programme in the region, and set up the most forward-looking hemodynamic research laboratory and Cardiovascular Surgical Research Group in Singapore, after winning numerous grants. His enthusiastic involvement in the field of minimally invasive cardiac surgery now encompasses a prototype simulation centre in Minimally Invasive Cardiac, Thoracic and Vascular Surgery, featuring manual and digital surgical simulators, virtual reality and more, in a high-tech environment at NUS.

Associate Professor Kofidis has trained in some of the world’s leading institutions including Rochester, New York; Houston, Texas; Stanford, California and Hanover, Germany. He has received various international awards and carries various offices and commitments internationally. He has lectured for the American Medical Association, the Food & Drug Administration, the Bill Gates Research Institute and more. As an academic teacher, proctor and consultant, he has participated in events and workshops in various countries around the world, bringing minimally invasive knowhow to doctors and patients alike.

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## ANNEX

### **NUHCS Minimally Invasive Cardiac Surgery (MICS) Programme**

Minimally Invasive refers to less trauma and burden to the patient. Also known as “Keyhole”, MICS encompasses operations on the heart coronary arteries, heart rhythm and heart valves, that are performed without opening the chest bone (median sternotomy), or by not using the heart-lung machine, or stopping the heart. Hence, MICS may be “less invasive” as compared to the traditional way heart surgery has been carried out in the past decades.

Since 2011, NUHCS’s Division of Adult Cardiac Surgery has piloted the MICS Programme - an innovative and enhanced technique of using smaller incisions and tools for heart surgery. Over the years, NUHCS has accumulated more experience, which enables further expansion and presentation of a valid platform to treat both coronary and structural heart disease. After collectively reaching specific key milestones in infrastructure, team training at the Department of Cardiac, Thoracic and Vascular Surgery (CTVS), routine cases and achievements in Southeast Asia, the Centre now offers a solid and reproducible platform for the treatment of surgical heart diseases. Hundreds of patients have benefited from Minimally Invasive Heart Surgery under the NUHS roof, thereby benefitting from less trauma, faster and better recovery.

NUHCS’ MICS Programme and its positive clinical outcomes are backed by an established and strong clinical and basic research team, which continuously reviews data and help further advance MICS technologies in the lab. For example, studies have shown that patients stay in the hospital for a significantly shorter period after their mitral valve or aortic valve surgery. It took years of training, for both individuals and teams, and substantial financial investments to establish the Centre as what it is today with well-equipped operating theatres for the NUHCS MICS Programme in Singapore.

### **Centre for Surgical Simulation Training and Education**

The NUHCS MICS Programme has since achieved an international presence and is serving as a key pillar for structured training and education. The Centre has organised numerous workshops, wet-labs, boot-camps, and ran entire chapters of international conferences.

## Chinese Glossary

National University Heart Centre, Singapore (NUHCS)	新加坡国立大学心脏中心 (国大心脏中心)
Associate Professor Theo Kofidis Head and Senior Consultant Department of Cardiac, Thoracic and Vascular Surgery National University Heart Centre, Singapore	Theo Kofidis 副教授 主任兼高级顾问医生 胸肺外科, 新加坡国立大学心脏中心 (国大心脏中心)
Associate Professor, Department of Surgery, Yong Loo Lin School of Medicine, National University of Singapore	外科学系副教授 新加坡国立大学杨潞龄医学院 (国大杨潞龄医学院)
Minimally Invasive Cardiac Surgery	微创心脏内科手术

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## About National University Heart Centre, Singapore

The National University Heart Centre, Singapore (NUHCS) brings together the resources, expertise and capabilities in the areas of Cardiology, Cardiothoracic and Vascular Surgery to better meet the needs of the growing number of patients with heart disease. A key centre for the treatment and management of complex cardiovascular diseases, its core clinical programmes include heart failure, structural heart disease, acute coronary syndrome, vascular medicine and therapy, women's heart health and heart rhythm.

Comprising a team of cardiovascular specialists and experts from a multitude of medical and surgical disciplines, the NUHCS provides a comprehensive and holistic approach to the treatment of patients with heart problems. This approach is backed by cutting edge knowledge and information gathered by the Cardiovascular Research Institute (CVRI).

The CVRI focuses on developing niche research work in creating new knowledge in support of NUHCS' core clinical programmes by working in close collaboration with both local and international renowned research institutes such as the Agency for Science, Technology and Research (A\*STAR) and New Zealand's Christchurch School of Medicine and Health Sciences.

Partnerships are formed with various medical institutes as NUHCS is a selected training centre for international physicians. Education and training ensures that our medical professionals are kept abreast. Nurturing the next generation, our specialists are also actively involved in conducting workshops and teaching programmes for our medical undergraduates.

For more information, visit: <https://www.nuhcs.com.sg>.

### **About the National University Health System (NUHS)**

The National University Health System (NUHS) aims to transform how illness is prevented and managed by discovering causes of disease, development of more effective treatments through collaborative multidisciplinary research and clinical trials, and creation of better technologies and care delivery systems in partnership with others who share the same values and vision.

Institutions in the NUHS Group include the National University Hospital, Ng Teng Fong General Hospital, Jurong Community Hospital and Alexandra Hospital; three National Specialty Centres - National University Cancer Institute, Singapore (NCIS), National University Heart Centre, Singapore (NUHCS) and National University Centre for Oral Health, Singapore (NUCOHS); the National University Polyclinics (NUP); Jurong Medical Centre; and three NUS health sciences schools – NUS Yong Loo Lin School of Medicine (including the Alice Lee Centre for Nursing Studies), NUS Faculty of Dentistry and NUS Saw Swee Hock School of Public Health.

With member institutions under a common governance structure, NUHS creates synergies for the advancement of health by integrating patient care, health science education and biomedical research.

As a Regional Health System, NUHS works closely with health and social care partners across Singapore to develop and implement programmes that contribute to a healthy and engaged population in the Western part of Singapore.

For more information, please visit <http://www.nuhs.edu.sg>.