PRESS RELEASE

For Immediate Release

Union Hospital Introduces Hong Kong's First Dual Source Photon-Counting CT Scanner Rapid Scan in Seconds; Up to 70% Less Radiation Dose

29 August 2024, Hong Kong – Union Hospital proudly announces the introduction of the state-of-the-art Dual Source Photon-Counting Computed Tomography (PCCT) scanner, which offers unparalleled image quality, reduced radiation dose, and improved patient comfort. This revolutionary PCCT scanner sets a new standard in medical imaging, and makes a significant advancement in patient care:

- Up to 70% reduction in radiation dose and 30% less intravenous contrast medium, enhancing patient safety and reducing burden on renal function depending on the region of examination.
- Ultra-high resolution images with 0.2mm slice thickness, allowing more accurate assessment and increase diagnostic capability in fine structures.
- 82 cm wide gantry opening and less than 1 second scanning time for lung screening, offering more comfortable examinations especially for elderly and children.

Reduced Radiation Dose. Lower Contrast Medium. Enhanced Patient Safety.

Dr John Hui Ping-kuen, Head of Department of Medical Imaging at Union Hospital, highlighted the key benefits of the new PCCT scanner, "Patient safety is our top priority and PCCT addresses this by significantly reducing dosage for both radiation and contrast medium. For example, a single low-dose CT thorax scan using this PCCT generates radiation dose only equivalent to two chest x-ray examinations, representing a 70% reduction compared to conventional CT scans. Furthermore, the PCCT enhances the iodine contrast-to-noise ratio, which measures how well the contrast medium shows up against background tissue, reducing the amount of contrast medium required and alleviating burden of patients' renal function."

Conventional CT technology involves a two-step conversion process, while the new PCCT's photon-counting detector employs one-step process, which greatly eliminates information loss and improves imaging quality by reducing electronic noise. As a result, images are sharper and more detailed without the need for higher radiation dose, which is particularly beneficial in preventive examinations. For example, high risk people like smokers can perform low-dose CT thorax annually using PCCT, enabling effective early detection of cancer with much lower radiation dose.

Ultra-high Resolution. Increased Diagnostic Capability.

Low-dose CT thorax scan is adopted worldwide as a preventive measure for lung cancer screening and is proven effective in reducing lung cancer mortality by the medical community. Compared with conventional chest x-ray, the new PCCT scanner can detect tiny lesions as small as 1mm, allowing the evaluation of necessary follow-ups and clinical treatments at early stage. While conventional CT captures images with 0.6mm slice thickness, the PCCT offers an impressive slice thickness of 0.2mm by reducing the size of detector pixels, resulting in the improved evaluation of ultra-fine structures, such as temporal bone and coronary stent patency. This technological advancement dramatically increases the diagnostic capability for coronary heart disease.

Dr Steven Li Siu-lung, Director of Heart Centre at Union Hospital, elaborated on the PCCT's impact on cardiac disease application, "CT coronary angiogram has revolutionised the diagnostic pathway of coronary heart disease in the past 20 years, yet the imaging technology still has a few

barriers to overcome. The emergence of photon-counting technology transcends the limitations of conventional CT, improving greatly on image quality and spatial resolution. The PCCT also increases dramatically the diagnostic capability in heavily calcified vessels and in-stent restenosis."

Fast Scanning. Wide Gantry Opening. More Comfortable Examinations for Elderly and Children.

The PCCT sets a new standard for patient accessibility. Its rapid gantry rotation time of 0.25 seconds and impressive temporal resolution of 66ms enable swift scanning procedures. For example, lung screening can be completed in a mere 0.5 second, while whole-body angiogram takes just 1 second. This eliminates the need for elderly patients to hold their breath and the necessity of sedation for paediatric patients. Moreover, the scanner's wide gantry opening of 82cm reduces the feeling of claustrophobia, ensuring a comfortable examination experience for patients.

Dr Yannie Soo Oi-yan, Assistant Chief Hospital Manager of Union Hospital, stated, "This cutting-edge PCCT scanner marks a significant leap forward in medical imaging. Its patient-centric features not only greatly reduce patient risks of radiation exposure and contrast medium, but also enhance the overall patient experience. The PCCT also improves diagnostic accuracy in many specialties and allows for more patient access. We are thrilled to offer our patients precise and comprehensive examinations while prioritising their safety and comfort."

This revolutionary PCCT scanner has been in full operation in Union Hospital since March 2024, and has successfully performed over a thousand imaging studies for patients.

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About Union Hospital

Founded in 1994, Union Hospital is a private hospital located in Tai Wai, Shatin. Building on the core values of 'Caring. Reliable. Empathetic.', Union Hospital is dedicated to providing easily accessible, personalised and quality healthcare services. The Hospital provides a wide range of comprehensive medical services, including family medicine, specialist out-patient clinics, surgery, medical imaging, in-patient hospital care, as well as the first private 24-hour Emergency Medicine Centre in Hong Kong. In addition to a network of polyclinics in different districts of Hong Kong, Union Hospital has also established a number of medical centres in Tsim Sha Tsui in recent years, including Mira Place and H Zentre, catering to different medical needs with its high-quality medical care and state-of-the-art facilities. For more information, please visit www.union.org.

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