ANNEX F: FACTSHEET – THE CENTRE FOR HEALTHCARE ASSISTIVE AND ROBOTICS TECHNOLOGY (CHART) AT CHANGI GENERAL HOSPITAL

Integrated emergency casualty management through technology and 5G connectivity

In major incidents involving mass casualties, multiple emergency response agencies are actively involved in security, search and rescue, identification of casualties, triage, initial treatment and stabilisation at the incident site, with casualties then conveyed to hospitals.

The management of casualties from the triage station to the accounting of casualties going to hospitals rely heavily on a medical emergency team deployed on-site. Current casualty tracking systems are largely manual, with the use of analogue systems, such as triage cards. The medical team commander also has to manage situation awareness, the flow of information with the on-site medical crew and also the various hospitals involved in a mass casualty incident.

In harnessing technology to improve patient outcomes, the Centre for Healthcare Assistive and Robotics Technology (CHART) at Changi General Hospital (CGH) jointly developed a robotics platform that can respond to mass casualty events; with Integrated Health Information Systems, Open Robotics and Hope Technik. Riding on the capabilities of the 5G Network@Sentosa, CGH validated its proof-of-concept through a trial held at the Ranger Station compound in Singapore on 23 August 2021.

In a mock mass casualty incident scenario, medical crew performed identification and triaging of casualties into different prioritisation zones within the Ranger Station compound. Information on the casualties was digitally logged and tracked by a system integrated with the robotics platform through a smart tag. Crucial information required for casualty identification and administering of medical care, such as medical history and diagnosis, was easily accessed via the system as required. Aided by robotics technologies and an intelligent dashboard, the comprehensive system provides an overview that enables quick decision-making on-site so that casualties can be sent to hospitals for more timely treatment. The system can also be integrated with hospital platforms to enable seamless flow of critical information.

Throughout the trial, the 5G network enabled high connectivity among complex systems and real-time information updates among incident response agencies. The dedicated bandwidth of the 5G network for emergency purposes also provided security and service assurance.

"The robotics platform was assessed to be effective and scalable at the trial. With greater situational awareness and data analytics for mass casualty incidents, inter-agency coordination can become more seamless, with efficient decision-making and resource allocation leading to enhanced patient outcomes," said Dr Jimmy Goh, a senior consultant at CGH's Emergency Department. Dr Goh guided the development team on the medical emergency processes that shaped the innovative system concept.

The concept shows potential for adoption by national agencies and CGH is working with various partners to explore incorporating the mass casualty information system in their emergency responses. The development of the robotics platform is funded by the National Robotics Programme.

END

About Changi General Hospital

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

For media enquiries, please contact:

Changi General Hospital

Teo Yin Yin

Corporate Communications

(65) 6936 6935 / 96261678

Yin_Yin_Teo@cgh.com.sg