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## Q & M INKS COLLABORATION AGREEMENT FOR PIONEER AI TECHNOLOGY IN DENTAL HEALTHCARE IN SOUTHEAST ASIA

- Exclusive artificial intelligence (AI) research collaboration agreement (the "Collaboration Agreement") with IMU Education Sdn Bhd ("IMUE") to develop an AI-enhanced dental treatment decision support system for the management of common dental problems (the "AI Project")
- The AI Project is slated to be the first of its kind in Southeast Asia for use in the dental healthcare landscape, and the prototype is targeted to be rolled out in the fourth quarter of 2019
- The exploration of other verticals such as AI technology will further enhance the efficiency, quality and consistency of Q & M's processes on a group level and unlock opportunities for future growth

**Singapore, 8 April 2019 – Q & M Dental Group (Singapore) Limited ("Q & M" or the "Group")**, a leading private dental healthcare group in Asia, has entered into a Collaboration Agreement with IMUE, to develop an AI-enhanced dental treatment decision support system for the management of common dental problems.

### Background

The clinical management of dental problems is highly dependent on the diagnoses of the dentists which require a great deal of knowledge of, amongst other factors, the various risk factors, treatment plans, treatment outcomes, individual patient's conditions, and incidence and progression rates. As dentists are limited by and differ in their cognitive functions, these factors combined may result in a divergence in diagnoses and subsequent treatment plans made by different dentists. The AI-enhanced dental treatment decision support system will put in place the best dental expertise that not only provide the most appropriate treatment but also automate and optimize the involvement of human judgement. The Group continues to launch initiatives to convert these challenges into advantages, further improving the quality of treatments received by patients and patient experience.

## **The AI Project**

The AI Project is focused on the development of AI algorithms to intelligently assist dental treatment decision-making. The end product will produce the most comprehensive treatment plans in the best interests of the patients and will aid the dentists in ensuring early and/or complete detection of dental problems. Further, it can be used as an adjunct training tool which the Group can leverage upon in the continuing education of its pool of more than 200 dentists.

International Medical University (“**IMU**”) is the largest private premier higher learning educational institution in Malaysia owned and operated by IMUE, a company incorporated under the laws of Malaysia. The development of the AI system will involve expertise from IMU School of Dentistry, responsible for the development of the evidence-based decision tree, and the IMU Institute for Research, Development and Innovation (“**IRDI**”), in-charge of getting results into the AI system and validating them. The evidence-based decision tree will be developed based on available research sourced by lecturers in IMU and strengthened by anonymised data. These will then be further verified by a panel of dental specialists at Q & M.

The AI system will draw on the dental knowledge and expertise of Q & M, which has the largest collective of qualified dentists and dental specialists in private dental healthcare in Singapore. The system will be able to provide evidence-based treatment plans that further enhances the insight of the dentist as well as increases patient confidence in Q & M. It will also reinforce dentists’ ability to discuss preventive measures with patients, to reduce the risk of patients contracting further common dental problems by analysing the patients’ profile in real-time.

Q & M will own the rights to the technology and the AI Project will be funded through internal resources. Q & M is also in the process of registering a patent for this AI-enhanced dental treatment decision support system. The Collaboration Agreement is not expected to have any material impact on the net tangible assets per share and earnings per share of the Group for the current financial year ending 31 December 2019.

**Dr Ng Chin Siau, Group Chief Executive Officer of Q & M** commented, *“The welfare of our patients is paramount. This AI-enhanced support system will help further develop our patient-centric approach which respects patient autonomy by increasing their understanding about their own health. Our patients will be able to receive personalised diagnoses and treatment plans which take into account their own specific characteristics. Patients will also receive advice on preventive measures to minimise the risk of succumbing to oral diseases in the future.*”

*Evidence-based treatment options will be made available to dentists in real-time, improving the decision-making process while ensuring more standardization of treatment plans across the Group. Greater uniformity of standards and more control over the treatment planning process further enhances our ability to provide consistent, higher quality dental healthcare, which is key to our regional growth."*

#### **About IMU**

IMU is the largest private premier higher learning educational institution in Malaysia and the first university in Malaysia that will integrate data science and Industrial Revolution (IR) 4.0 initiatives into the curriculum for the training of healthcare professionals. The IMU IRDI carries out fundamental and applied research across a wide range of academic and industrial research fields.

IMU has been involved in the development of several similar projects such as an AI-driven clinical decision support system for cancer treatments, AI-driven discovery of new drugs or repurposing of existing drugs for rare and refractory diseases, and the identification of genetic drivers of cancer dependency in pancreatic cancers through machine learning and deep learning of datasets, amongst others.

The team from IMU's School of Dentistry will be led by Professor Toh Chooi Gait who has over 35 years of experience in dentistry and has co-authored books and published more than 60 articles on dentistry in various professional journals. From IMU's IRDI, Professor Leong Chee Onn, a Harvard trained cancer biologist, and Dr Elaine Chan, a specialist in Python programming, advanced statistics and image analytics will be involved in the AI Project. Together, they have vast experience and expertise in developing automated decision support systems for use in the healthcare landscape.

Commenting on the research collaboration with Q & M, **Professor Abdul Aziz Baba, Vice Chancellor and CEO of IMU Education Sdn Bhd** said, *"As one of Asia's leading private dental healthcare groups, Q & M is a reputable and established dental healthcare services provider with multi-disciplinary expertise. Our partnership with Q & M allows us to tap on Q & M's extensive medical datasets, financial resources and valuable clinical expertise to develop this AI-enhanced dental treatment decision support system to assist dentists with improved accuracy in diagnosis and targeted treatment of oral diseases. We look forward to collaborating with Q & M on this ground-breaking project, with a view to maximise patient welfare and improve diagnostic accuracy."*

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*This news release is to be read in conjunction with the Group's announcement posted on SGXNET on 8 April 2019.*

### **About Q & M Dental Group (Singapore) Limited (QC7.SI)**

Q & M Dental Group (Singapore) Limited is a leading private dental healthcare group in Asia. The Group owns the largest network of private dental outlets in Singapore and aims to expand its operations geographically and vertically through the value chain in Malaysia, the People's Republic of China ("PRC") and the rest of the Asia Pacific Region. Established in 1996, Q & M has built a brand that is synonymous with accessible and quality dental healthcare.

The Group operates 91 dental outlets, 4 medical clinics and 3 dental supplies and equipment distribution companies across Singapore, Malaysia and the PRC. Underpinned by more than 230 experienced dentists and close to 400 supporting staff, the Group has an outreach of more than 600,000 patients in Singapore.

With an extensive network of outlets spanning various locations in Singapore, the Group continues to make private dental healthcare easily accessible, expanding its operations through organic growth across the island. Outside of Singapore, the Group continues to enlarge its presence in Malaysia organically and through acquisitions, and actively seeks opportunities to acquire large and established dental institutions and dental supplies manufacturers in the PRC.

The Group was listed on the Main Board of Singapore Exchange Securities Trading Limited ("SGX-ST") on 26 November 2009.

For further information on the Group, please visit [www.QandMDental.com.sg](http://www.QandMDental.com.sg).

### **About International Medical University Malaysia**

IMU is the largest private premier higher learning educational institution in Malaysia owned and operated by IMU Education Sdn Bhd ("IMUE"), a company incorporated under the laws of Malaysia. Established in 1922, IMU is an integrated medical and healthcare institution specialising in medicine, health sciences and research programmes. In partnership with some of the world's most prestigious universities and respected individuals in the field of medicine and healthcare, IMU offers pre-university, undergraduate, postgraduate and continuous learning programmes in the fields of healthcare and research. With a renowned and highly experienced faculty with extensive experience in academia and research, IMU is a pioneer in medical and healthcare research and education and continues to play a significant role in nation-building.

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