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Singapore's mobile app to guide insulin dosage

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Singapore: Many patients with type 2 diabetes who are new to insulin therapy face the daily challenge of not knowing how much insulin to inject at the appropriate time. Part of the reason is the lack of confidence to self-adjust insulin dosage without doctor's supervision. Delayed dosage adjustment may result in the persistence of high sugar levels that could lead to serious

diabetic complications.

Doctors from the Singapore General Hospital (SGH) Department of Endocrinology and Integrated Health Information Systems (IHiS) have developed a mobile application named SGH Diabetes Pal to help patients overcome the problem. This app takes the guesswork out of insulin injections by informing users of the required dosage based on the fasting blood sugar reading they input into the app every morning.

To study if the app can help patients achieve good glycaemic control, SGH and Duke-NUS Graduate Medical School are conducting a study to determine its effectiveness. This is the first such clinical trial involving mobile apps in a hospital setting.

"As part of the Academic Healthcare Cluster, we are always looking at innovative ways to improve patient empowerment and clinical outcomes. The SGH Diabetes Pal is an example of how we leverage on technology to achieve that goal," said Dr Bee Yong Mong, Director, Diabetes Centre and Consultant, Department of Endocrinology, SGH.

"This study can potentially change current practices and improve the clinical understanding of diabetes management given the pervasiveness and simplicity of mobile apps," said Dr. Bee, alo the site-Principal Investigator of the study.

A total of 80 patients who are new to insulin therapy will be recruited for the randomised controlled trial and be put on the 24-week study. They will be divided into two groups and receive individual counselling on all aspects of insulin treatment but only one group will be given access to the SGH Diabetes Pal. At the end of the study, the change in glycaemic control between both groups will be compared.

"Despite continuing research efforts towards improving healthcare delivery and disease outcomes for patients with diabetes, research gaps in diabetes management remain, particularly in the Asian setting. The need to improve diabetes management deserves greater attention in Singapore where incidence is among the highest in developed countries, and diabetes prevalence is consistently high across ethnic groups," said Professor David Matchar, Director for Health Services and Systems Research, Duke-NUS Graduate Medical School.

On the decision to leverage on mobile apps, Dr Chong Yoke Sin, Chief Executive Officer, IHiS said, "In Singapore, there is high smartphone penetration among the general population, and increasingly among the elderly. IHiS and the public hospitals have developed several clinical mobile apps as part of our efforts to reach out beyond the hospital walls, to care for the elderly with chronic diseases in the community. This study will guide us on how to further employ mobile technologies to transform healthcare where there is partnership
between the patient and doctor in managing the patient's health."