

MEDIA RELEASE

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NUH ENDOCRINOLOGY TEAM SHOWCASES END-TO-END CARE MODEL THAT PROTECTS HOSPITALISED PATIENTS WITH DIABETES MELLITUS (DM) ACROSS THEIR CARE JOURNEY

NUH's Inpatient DM management team highlights how safe prescribing is strengthened through proactive monitoring, rapid intervention and coordinated care transitions.

SINGAPORE — Newer diabetes treatments are transforming care, helping patients not only manage their blood sugar levels but also protect their hearts and kidneys while reducing the risk of serious complications. However, unlocking the full benefits of these medications requires more than prescribing the right drug. Safe use depends on timely monitoring, patient education and coordinated care across every stage of treatment.

Recognising this, the NUH DM team has developed a multidisciplinary care model that supports patients from the point of prescribing through hospitalisation, discharge and recovery in the community. Bringing together physicians, nurses, pharmacists and care coordinators, the approach strengthens medication safety while helping patients benefit from the latest advances in diabetes care.

The team's initiatives were showcased at the **NICQ-NUH Grand Rounds: Safe Prescribing, Safe Transitions, Safe Recovery at NUHS**, a multidisciplinary educational forum for healthcare professionals held in conjunction with **World Patient Safety Day 2026**. Centred on the theme of non-communicable diseases (NCDs), the theme for this year's World Patient Safety Day "Self Care for Life" emphasises safe care for NCDs cannot rest on healthcare professionals alone. It requires patients, families, and communities to be active, informed partners in that care journey. The DM team's initiative tackles a critical paradox that many of us in clinical practice will recognise: in diabetes care, both action and inaction carry risk.

Led by Adjunct Associate Professor Khoo Chin Meng from the Division of Endocrinology, Department of Medicine, NUH, the session highlighted a number of initiatives implemented at NUH. These include **SPARK**, a proactive digital monitoring programme that identifies hospitalised patients at risk of hyperglycaemia **before complications occur**; **HypoBox**, a nurse-led intervention that enables the **rapid treatment of hypoglycaemia**; and structured care-transition processes that support patients beyond discharge.

Advancing safe prescribing in modern diabetes care

For the NUH DM team, safe prescribing does not end when a medication is prescribed. It extends across every stage of a patient's journey, from treatment initiation and inpatient care to discharge and recovery in the community.

This philosophy underpins a coordinated care model that combines patient education, proactive monitoring and multidisciplinary support to help prevent, identify and manage treatment-related complications.

Adj A/Prof Khoo Chin Meng, Division of Endocrinology, Department of Medicine NUH, said:

"The evidence is clear that SGLT2 inhibitors and GLP-1 receptor agonists improve outcomes for patients with diabetes by protecting the heart and kidneys and reducing the risk of serious complications. As clinicians, we have a responsibility to ensure that patients receive these therapies when appropriate. Equally important, however, is ensuring that patients, caregivers and healthcare professionals are equipped to recognise and manage potential adverse effects. Safe prescribing is not simply about selecting the right medication. It is about building the systems, education and support structures that allow patients to use these treatments safely across every stage of care."

Proactively identifying at-risk patients through spark

Most hospital systems respond when a problem is detected. SPARK was designed to do the opposite.

A cornerstone of NUH's inpatient diabetes safety framework, the digital programme enables the DM team to identify patients at risk of poor glycaemic control before complications occur. Rather than waiting for an alert, referral or clinical deterioration, clinicians proactively seek out patients who may require specialist support, allowing intervention at an earlier stage.

Integrated within NUH's electronic medical record system, SPARK continuously screens inpatient data and generates lists of patients who may be at risk of poor glycaemic control. Using SPARK, we developed the ProActive Service (since 2018) to identify those patients with DM who will be reviewed earlier by the Inpatient DM management team as their first touchpoint of care.

The ProActive Service currently includes the following groups of patients:

1. For patients with DM admitted with hyperglycemic crisis (Diabetic Ketoacidosis or Hyperosmolar Hyperglycaemic State) or severe hypoglycaemia.
2. For patients with DM who have undergone Coronary Artery Bypass Grafting surgery
3. Patients with DM in all Surgical wards and Cardiology who have hyperglycaemia¹ and/or hypoglycaemia²

What distinguishes SPARK is its focus on identifying patients before they experience preventable complications. By proactively reviewing patients across the hospital, the team is able to optimise glucose control earlier, support wound healing, reduce the risk of infection and other diabetes-related complications, and facilitate recovery during hospitalisation.

¹ Defined as 2 or more POCT BG > 20 mmol/L within 48 hours

² Defined as POCT BG < 2.5 mmol/L within 48 hours

Today, SPARK is supported by a multidisciplinary team comprising physicians, nurses and pharmacists who work alongside primary teams to optimise inpatient DM management.

Dr Doddabele Srinivasa Deepak, Senior Consultant, Division of Endocrinology, Department of Medicine, NUH, said:

"SPARK was developed on the principle that we should not wait for patients to become unwell before intervening. By proactively identifying patients at risk, we can initiate appropriate management earlier, support primary teams and reduce the likelihood of avoidable complications. This allows us to deliver safer and more coordinated care across the hospital."

Empowering nurses to respond rapidly to Hypoglycaemia

Complementing SPARK is HypoBox, an initiative developed by the nurses within the NUH DM team to enable the rapid management of hypoglycaemia. HypoBox is a nurse-led initiative designed to enable rapid and standardised treatment of hypoglycaemic emergencies. By bringing essential treatment supplies and the management protocol together at the point of care, nurses can intervene promptly, confidently and consistently. Located in wards and clinics across NUH, the ready-to-use emergency kit that contains fast-acting glucose, complex carbohydrate options and hypoglycemia management guidelines.

Hypoglycaemia remains one of the most common complications encountered by hospitalised patients receiving glucose-lowering treatment. If not recognised and treated promptly, severe episodes can result in seizures, loss of consciousness, neurological injury, coma and other serious adverse outcomes.

Since its implementation, more patients are able to achieve hypoglycaemia rescue within the recommended target time, enabling earlier recovery and reducing the risk of progression to severe hypoglycaemia. This reduces variability in practice and enhances patient safety.

Ms Heng Boon Ling, Advanced Practice Nurse, Nursing Department, NUH, who spearheaded the initiative, said:

"HypoBox began as a ground-up effort to make hypoglycaemia treatment faster, simpler and more consistent for frontline staff. During a hypoglycaemic event, every minute matters. We wanted nurses to have immediate access to the right treatment and clear instructions so they could act without delay. Through the train-the-trainer approach, we have built capability across the organisation and strengthened confidence in delivering safe diabetes care."

Together, the NUH DM team's safe prescribing framework, SPARK digital programme, HypoBox initiative and structured transition-of-care processes form an integrated safety ecosystem that supports patients throughout the continuum of diabetes care.

Delivered by a multidisciplinary team of physicians, Advanced Practice Nurses, pharmacists and care coordinators, the model demonstrates how healthcare systems can maximise the benefits of life-saving diabetes therapies while ensuring that robust safeguards are in place to prevent avoidable harm.

Chinese Glossary

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About the National University Hospital (NUH)

The National University Hospital (NUH) is Singapore's leading university hospital. While the hospital at Kent Ridge first received its patients on 24 June 1985, our legacy started from 1905, the date of the founding of what is today the NUS Yong Loo Lin School of Medicine. NUH is the principal teaching hospital of the medical school.

Our unique identity as a university hospital is a key attraction for healthcare professionals who aspire to do more than practise tertiary medical care. We offer an environment where research and teaching are an integral part of medicine, and continue to shape medicine and transform care for the community we care for.

We are an academic medical centre with over 1,200 beds, serving more than one million patients a year with over 50 medical, surgical and dental specialties. NUH is the only public and not-for-profit hospital in Singapore to provide trusted care for adults, women and children under one roof, including the only paediatric kidney and liver transplant programme in the country.

The NUH is a key member of the National University Health System (NUHS), one of three public healthcare clusters in Singapore. For more information, visit www.nuh.com.sg