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## **War against diabetes: Pilot programme by KKH and Temasek Foundation Cares to improve care for pregnant women with gestational diabetes mellitus**

**Singapore, 7 September 2017** – In support of the government's War on Diabetes, KK Women's and Children's Hospital (KKH) and Temasek Foundation Cares have jointly introduced a new pilot programme to improve the detection, care and support for women who have diabetes during pregnancy. Known as gestational diabetes mellitus (GDM), this condition increases the risk of women developing type 2 diabetes mellitus (T2DM) in their lifetime. The 'Temasek Foundation Cares GDM Care' programme aims to benefit about 5,400 women and their families over the three-year pilot.

The incidence of GDM is rising globally due to an increasing average age for childbearing as well as an increased prevalence of diabetes in the population. Asian women have a higher risk of GDM. In Singapore, up to one in five women<sup>1</sup> are at risk of developing diabetes during pregnancy. The high incidence is also evident from recent KKH studies which showed that about 15 to 20 per cent of pregnant women have GDM<sup>1</sup>. Studies also show that up to 70 per cent of women will develop diabetes at some point in their lifetime following delivery<sup>6, 7</sup>.

Women with GDM have an increased risk of developing high blood pressure during pregnancy, experiencing preterm labour, and also requiring caesarean section to deliver their babies amongst other maternal complications. Their babies are at higher risk of being big babies, i.e. weighing more than four kilogrammes at birth, and have a higher chance of suffering birth trauma and a lack of glucose in the bloodstream which can lead to long-term negative health effects. Children born from pregnancies affected by GDM also have higher risks of developing obesity and T2DM later in life. GDM is also associated with an elevated risk of both maternal and fetal mortality.

Despite the risks, about 90 to 95 per cent of women with GDM do not follow up with regular check-ups to monitor their diabetes condition after delivery to ascertain if their condition has resolved, or maintain a routine of screening for T2DM at least once every three years.

The GDM Care programme, led and managed by KKH, is a new model of care with a structured approach that enables earlier detection of GDM. The programme offers timely intervention and close follow-up care aimed at improving the health outcomes for all expectant mothers with GDM in KKH. The programme also provides the expectant mothers and their families with educational support to encourage healthier lifestyles and minimise the risks of eventually developing T2DM.

Mr Richard Magnus, Chairman, Temasek Foundation Cares, said: "This is the first structured model of care in Singapore to help pregnant women with gestational diabetes. Additional financial assistance will be given to those who need, to be part of this programme. Expectant mothers are encouraged to use this programme for their good and that of their children."

The programme lead, Professor Tan Kok Hian, who is also Head and Senior Consultant, Perinatal Audit and Epidemiology Unit, Division of Obstetrics and Gynaecology, KKH, said, “From current statistics, it is estimated that more than 6,000 pregnant women suffer from GDM every year, of whom more than 4,000 will develop diabetes in their lifetime. This programme further strengthens our ongoing efforts to enhance care and improve health for the future generations of women and children. With early detection of GDM, timely intervention and optimal holistic medical care, we will optimise prevention and management of diabetes for these women.”

Temasek Foundation Cares has committed \$1.09 million to the GDM Care programme which will be piloted over a three-year period.

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### **About KK Women's and Children's Hospital (KKH)**

KK Women's and Children's Hospital (KKH) is a recognised leader and Singapore's largest tertiary referral centre for Obstetrics, Gynaecology, Paediatrics and Neonatology. Founded in 1858, the 830-bed academic medical institution leads in patient-centred management of high risk conditions in women and children. More than 500 specialists adopt a compassionate, multi-disciplinary and holistic approach to treatment, and harness medical innovations and technology to deliver the best medical care possible.

Accredited as an Academic Medical Centre, KKH is a major teaching hospital for all three medical schools in Singapore, Duke-NUS Medical School, Yong Loo Lin School of Medicine and Lee Kong Chian School of Medicine. The Hospital also runs the largest specialist training programme for Obstetrics and Gynaecology and Paediatrics in the country. Both programmes are accredited by the Accreditation Council for Graduate Medical Education International (ACGME-I), and are highly rated for the high quality of clinical teaching and the commitment to translational research.

For more information, please visit [www.kkh.com.sg](http://www.kkh.com.sg)

### **About Temasek Foundation Cares**

Temasek Foundation Cares is a Temasek funded non-profit philanthropic organisation that aims to help improve the lives of underprivileged individuals, families and communities in Singapore; and to build the capability and capacity of all people in Singapore to be prepared for emergencies.

Set up in 2009 as an Institution of a Public Character, it works in partnership with various voluntary welfare organisations, non-profit organisations, government agencies, Ministries and other institutions to support programmes that contribute to the well-being, dignity, livelihood, and emergency preparedness of its beneficiaries.

For more information, please visit <http://www.temasekfoundation-cares.org.sg/>

## FACTSHEET

### **Key Objectives of the Temasek Foundation Cares - GDM Care Programme**

#### **1. Establish an effective system for the early diagnosis of all GDM cases with optimal care and follow-up of GDM cases during pregnancy**

Worldwide<sup>2,3,4</sup> and locally<sup>5</sup>, studies have shown that compared to a targeted GDM screening protocol, a routine GDM screening protocol for all pregnant women is more effective in detecting GDM cases. As part of a pilot trial since 1 January 2016, all pregnant women in the care of KKH and Singapore General Hospital (SGH) are offered GDM screening between 24 and 28 weeks of gestation. On average, more than 70 per cent of all pregnant women in KKH took up this GDM screening. Data from the pilot shows that the introduction of routine GDM screening in antenatal care has enhanced early detection of GDM in KKH by about 20 per cent.

The new model of care, since the introduction of the Temasek Foundation Care-GDM Care Programme, further enhances the care during pregnancy through a team of Diabetes Care Navigators, comprising specially-trained nurses. Pregnant women who decline routine GDM screening, will be followed up by the Diabetes Care Navigators for education on the importance of GDM screening and the opportunity to optimise control of GDM through diet and exercise, should the condition be detected. For pregnant women who are detected with GDM early through the routine GDM screening, the Diabetes Care Navigators will facilitate close follow-up and encourage them to observe the care plan to enable optimal management of GDM for the best outcomes for both mother and child.

To optimise care for all, subsidies are available for eligible patients, such as Singaporeans with a monthly household income of <\$1,800.

#### **2. Pilot a structured follow-up of women after delivery to diagnose diabetes early and allow good care for the disease**

The programme will enable all women diagnosed with GDM to receive a routine check-up at six weeks after delivery to check if the GDM has been totally resolved. If their GDM has been totally resolved, these women will receive a routine annual check-up at KKH or a community partner for the following three years. They will also be followed up by the Diabetes Care Navigators to facilitate continuity of care, including education on healthy lifestyle modifications such as diet and exercise to improve health outcomes for themselves as well as their families. If these women continue to have diabetes after their delivery, they will be referred to a network of care partners for further evaluation and follow-up management of their T2DM.

To optimise compliance with postnatal care and monitoring, subsidies are available for eligible patients.

## **Annex A: Patient's Story**

35-year-old Homemaker, Mdm Amy Loh (罗慧珍) is a mother of four children aged between four and 11 years. She is expecting her fifth child, and is due to deliver in February 2018. In 2013, during the third trimester of her fourth pregnancy, she was diagnosed with gestational diabetes mellitus (GDM), and was referred to the Obstetric Day Assessment Centre at KKH. She was educated on how to monitor her blood sugar levels and advised on healthy dietary choices and exercises that would help her maintain a healthy pregnancy. She delivered a healthy baby boy on 20 September 2013.

When Mdm Loh was eight weeks pregnant with her fifth child, she was offered GDM screening, aligned with the routine GDM screening practiced for all pregnant women receiving antenatal care at KKH. Diagnosed with GDM again in this pregnancy, she was invited to benefit from the Temasek Foundation Cares-GDM Care Programme. Under the programme, she is assigned a Diabetes Care Navigator who educated her on the importance of regular monitoring of blood sugar levels, as well as a healthy diet and exercise routine. The Diabetes Care Navigator also followed up regularly with her to encourage compliance. Mdm Loh is appreciative of the programme and the care and support she received through it, as she understands the long-term health benefits it holds for her and her children.

Beyond the antenatal advice and follow-up, the enhanced model of care with the Temasek Foundation Care-GDM Care Programme will enable Mdm Loh to also receive structured postnatal care to continue monitoring of her diabetes after delivery, and introduce timely intervention, if needed. Mdm Loh encourages all women to undergo GDM screening. She said, "Do whatever checks you need, especially GDM screening as your baby will benefit from it."