

**DBT/ THSTI**

## **Innovative solutions for maternal and child health**

By Sunderarajan Padmanabhan

New Delhi, April 08: Preterm birth (PTB) is a major public health problem globally. In the Indian context, its burden is especially high as 3.6 million of the 27 million infants born annually are preterm. Such preterm born infants continue to have substantial long-term consequences in late childhood and adult life.

With an aim of elucidating the risk factors of PTB and to create important knowledge-driven interventions and technologies that can be sustainably implemented in clinical practice and in the community, an inter-institutional and interdisciplinary research program, coordinated by Translational Health Science and Technology Institute in collaboration with other DBT institutes and public hospitals of Delhi NCR was initiated in 2014. Insights obtained from the study over the entire course of pregnancy may help in early stratification of women at risk of delivering preterm, so that timely healthcare interventions can be made.

Over the last five years, a cohort has been established at the Civil hospital in Gurugram, Haryana where almost 8,000 pregnant women have been enrolled very early in pregnancy and are followed till delivery. This program is utilizing advanced clinical, imaging and biotechnology platforms to develop tools to monitor maternal and fetal health and predict poor pregnancy outcomes. Under the program, around half a million USG images have been collected from different stages of pregnancy with clinically well-characterised phenotypes and covariates which can be used to build machine learning based innovative tools and solutions for clinical and public health applications.

A workshop on “Innovative solutions for maternal and child health using medical image analysis and AI” was organised at THSTI in collaboration with University of Oxford. The workshop brought together clinicians, physician-scientists, biologists, computer vision scientists and young researchers on a common platform to initiate thought-provoking discussions and identify some important research questions that can form the basis of innovative solutions.

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