



PETALING JAYA, Malaysia, Oct. 22, 2015 /PRNewswire/ — Materialise NV (NASDAQ: MTLI), a leading provider of Additive Manufacturing software and of sophisticated 3D Printing solutions in the medical and Industrial markets, used its HeartPrint® service to enable surgeons in Kochi to operate on two cardiac cases previously dismissed by hospitals as too difficult. With accurate 3D-printed replicas of the young patients' hearts, surgeons were able to visualise complex cardiac defects and formulate a detailed pre-operative plan to maximise the potential for success.

Krishna, 19, had been diagnosed with a complex congenital heart disease as an infant. After several doctors and hospitals declined to operate because of the complexity of his condition, Krishna went through childhood suffering from frequent breathlessness which worsened over the years and left him unable to attend school. In a separate case, Izam (15) was diagnosed with Congenitally Connected Transposition of the Great Arteries (ccTGA). Both cases represented highly complex structural defects of the heart, dissimilar to each other but each uniquely aided by Materialise's 3D printing solutions.

After Krishna and Izam underwent a full cardiac evaluation supervised by Dr. Mahesh Kappanayil (Pediatric Cardiologist) and Dr. Rajesh Kannan (Radiologist) at the Amrita Institute of Medical Sciences (AIMS), Kochi, the pediatric cardiac team decided to create a physical model of the two patients' hearts to make their pre-operative planning more precise. With engineering and design support from Materialise, Krishna's and Izam's medical imaging scans were converted into 3D models and printed at Materialise to form an exact replica of their hearts, providing a never-before-seen perspective into the defects. Surgeons at AIMS operated successfully on both patients in August 2015, armed with a deep new understanding owing to the 3D heart replicas.

Dr. Mahesh is convinced that 3D Printing holds tremendous potential for medical applications in India. "Sometimes, all the traditional ways of evaluating and planning treatment still fall short. Using these precise models to actually look 'inside' the heart, understand the lesions and precisely plan the operations much before the actual surgery was a definite game-changer. I'm proud to be an early adopter of 3D Printing for medical applications in India."

As for Krishna, one of the young patients who has regained a healthy life, 3D Printing is no stranger. As one of the hobbies he has nurtured through the years, Krishna even assembled his own 3D printer from a DIY kit last year, little imagining that the same technology would contribute to his own medical care.

"For Materialise, these two cases are living proof of our mission statement: to work for a better

and healthier world," says Vickneswaran Renganathan, Business Development Manager, Materialise, who facilitated communication between the surgical team at AIMS and the engineering team at Materialise. "I felt very proud that my role at Materialise allowed me to impact patients' lives in such a positive way."

For more information, please contact:

Vickneswaran Renganathan

Business Development Manager, Materialise Malaysia

Phone: +603 772 414 15 Ext: 141

Email: Vic@materialise.com.my

Visit: www.biomedical.materialise.com

Dr. Mahesh Kappanayil

Professor, Pediatric Cardiology, AIMS, Kochi, India

Phone: +91 484 280 1234 Ext: 3570/80

Email: maheshpeds@yahoo.co.in

About Materialise

With its headquarters in Leuven, Belgium, and branches worldwide, Materialise is a provider of Additive Manufacturing (AM) software solutions and sophisticated 3D printing services in a wide variety of industries, including healthcare, automotive, aerospace, art and design and consumer products. Materialise has been playing an active role in the field of AM since 1990, through its involvement in AM for industrial and medical applications, by providing biomedical and clinical solutions such as medical image processing and surgical simulations and by developing unique solutions for its customers' prototyping, production, and medical needs. For additional information, please visit: www.materialise.com.

About AIMS

The Pediatric Cardiac Care Unit of Amrita Institute of Medical Sciences (AIMS), Kochi, is well-known as a centre of excellence for pediatric cardiac care in the developing world. Established in 1998 under the leadership of Dr. R. Krishna Kumar, the unit has achieved respect, recognition and acclaim both among patients and the academia. The unit received the prestigious British Medical Journal (India) Award for Excellence in 'Quality Improvement in Healthcare' for 2014, for striving to provide world-class cardiac care to patients with congenital heart disease, despite limited resources. Known for pioneering and spearheading the progress of pediatric cardiology in India, the unit is one of the first in the region to adopt 3D Printing for planning heart surgery. For additional information, please visit: www.aimshospital.org.

Regulatory Information:

HeartPrint® is registered as a medical device in the USA and in the EU market. HeartPrint® models are intended to assist cardiovascular professionals in selecting appropriate tools and/or deciding on the optimal insertion of medical devices (such as stents), for cardiovascular surgical interventions.