



## The clinical benefits of iCMR are obvious

Dr. Gerald Greil joined Guy's and St. Thomas' NHS Foundation Trust and King's College London in London in 2006, pioneering the development of interventional cardiac MR (iCMR). Dr. Greil came to Children's Health in Dallas in 2015, where he established with his team the first cardiac catheterization laboratory at the University of Texas Southwestern/Children's Health in Dallas using MRI for catheter guidance. So far more than 150 cardiac catheterizations under MRI guidance have been performed safely there.



**'The clinical benefits of iCMR are obvious, there's not even a question,' says Dr. Greil.** 'There was strong interest from UTSW and Children's Health to establish this technology as a clinical tool, which we have done. Dallas was the right place for this program because we have a cath lab and MRI in close proximity to one another in the hospital, and because we have a large population of very complex, single-ventricle patients.'

Dr. Greil explains that as medical science advances, cardiologists are performing increasingly more complex and difficult procedures, with an increasing need for anatomical visualization during the procedure, as well as a need for precise and reproducible anatomic and functional information before, during and after the intervention, to evaluate the effectiveness of the intervention.

**The improved visibility of cardiovascular structures is a great advantage of iCMR, according to Dr. Greil.** 'With X-ray cath, you're only seeing bones and very dense structures. With MRI, you can see the soft tissue, vessels, myocardium, and so on. In a traditional cath lab, we need to inject nephrotoxic contrast agent to make these structures visible. This is not needed using MRI.'

Additionally, he says, longer, more complex procedures mean more time exposed to radiation in a cath lab, for both patients and physicians.

Yet despite the clear benefits, Dr. Greil says not everyone was immediately on board when he brought iCMR to Dallas. While the hospital leadership was enthusiastic about the program, 'Traditional' interventional cardiologists had reservations, he says. 'Much of the initial enthusiasm and support came from the younger, next generation of interventional cardiologists.'

Dr. Greil says he understands that some level of trepidation about any new technology or approach in medicine is to be expected. 'It's a common theme, regardless of where you are. It can be in any industry, not just medicine; people are almost never initially appreciative of innovation.'

However, he says, physicians were able to quickly see the advantages and benefits once they began performing the procedures. Now, Dr. Greil's team at Children's Health performs iCMR procedures as part of their clinical routine on a regular basis on pediatric patients.

***'To me, the ultimate goal is to perform iCMR procedures as the standard of care around the globe, dr. Greil says.'***

'There's no benefit to doing this only in Dallas,' Dr. Greil continues. 'I think this method needs to be widely available to the medical community. I very much hope this technology will have a major impact on healthcare around the world.'