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PAEDIATRIC SPINAL DEFORMITY RESEARCH AT THE MATER CHILDREN'S HOSPITAL IN BRISBANE.

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The Paediatric Spine Research group was formed in 2002 to perform high quality research into the prevention and management of spinal deformity, with an emphasis on scoliosis. The group has successfully built collaborative bridges between the scientific and research expertise at QUT, and the clinical skills and experience of the spinal orthopaedic surgeons at the Mater Children's Hospital in Brisbane. Clinical and biomechanical research is now possible as a result of the development of detailed databases of patients who have innovative and unique surgical interventions for spinal deformity such as thoracoscopic scoliosis correction, thoracoscopic staple insertion for juvenile idiopathic scoliosis and minimally invasive growing rods.

The Mater in Brisbane provides these unique datasets of spinal deformity surgery patients, whose procedures are not being performed anywhere else in the Southern Hemisphere. The most detailed is a database of thoracoscopic scoliosis correction surgery which now contains 180 patients with electronic collections of X-Rays, photographs and patient questionnaires. With ethics approval, a subset of these patients has had CT scans, and a further subset have had MRI scans with and without a compressive load to simulate the erect standing position. This database has to date contributed to 17 international refereed journal papers, a further 7 journal papers either under review or in final preparation, 53 national conference presentations and 35 international conference presentations.

Major findings from selected journal publications will be presented. It is anticipated that as the surgical databases grow they will continue to provide invaluable clinical data which will feed into clinically relevant projects driven by both medical and engineering researchers whose findings will benefit spinal deformity patients and scientific knowledge worldwide.