

ICEC means research boost for paediatrics

**Daithí Ó hAnluain
in London**

RESEARCH and treatment for paediatric ophthalmology will get a boost in the second half of 2006 when Moorfields Eye Hospital will open the International Children's Eye Centre (ICEC), a 'hospital within a hospital'.

Plans for the centre developed around the needs of children and their parents with the aim of dispelling the often-threatening reputation of hospitals. Doctors and nurses at the ICEC want to change memories of hospital treatment from pain to play.

Currently Moorfields treats 23,500 paediatric outpatients throughout its network of London clinics, while 1700 paediatric inpatients are treated at the main hospital. Those numbers should grow substantially when the new £15m centre opens.

"The children's ward in the main hospital is quite small and it is remarkable what the staff there manage to achieve," said Sarah Fisher, Nursing Director at Moorfields.

It will be replaced by six floors of dedicated space that includes paediatric accident and emergency, outpatient clinics, day-care wards, and hostel accommodation for children and their families.

The ICEC will treat all paediatric conditions including glaucoma, squint, cataract, plastics, anophthalmics, microphthalmics, ptosis, epiphora, external eye diseases and vitreoretinal conditions.

The Research department at the centre will cover an entire floor, which will be linked to Moorfields and the Institute of Ophthalmology by a bridge. Research is one of the major activities of the ICEC.

Seeing blind dog leads way to gene therapy

Within the next few years, for example, it begins a gene-therapy trial to cure one of

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the variations of Leber Congenital Amaurosis (LCA), linked to mutations in the gene encoding RPE65, which causes patients to lose vision. The RPE65 is a rare defect (1/100000), but the trial is an important proof of principle and could open the way for treatment of other inherited retinal dystrophies.

"These patients, a lot of them children, are missing a gene which is important for ensuring normal production of the light-sensitive pigments in the eye so basically they lose their sight. And if you can replace the gene and they can start seeing it will be a great advance. The therapy has worked on Briard dogs already. It's very exciting," said Peng Tee Khaw MD FRCS FRCOphth, a professor and consultant Ophthalmic Surgeon at Moorfields.

Professor Tony Moore will be carrying out this study with Professor Robin Ali and other colleagues at Moorfields and the Institute of Ophthalmology.

Moorfields has a long-standing reputation for ground breaking paediatric treatment. For example, Arthur Lister, pioneered the goniotomy procedure in Britain. The development of new treatments for childhood glaucoma has continued over five decades.

"I still look after the first child to have a goniotomy in Britain and he's doing fine, 50 years later," said Dr. Khaw

Other, more recent successes include improved treatments to prevent

scarring after surgery in patients who receive treatment for congenital glaucoma, or reducing the incidence of retinal scarring after vitrectomy and retinal detachment surgery.

"That retinal detachment research was inspired by the children, but the results apply to adults, so a lot of research at the new centre will benefit both children and adults through this research," said Dr Khaw.

Other research areas in ICEC will be aimed at better treatment for congenital cataract, research into the prevention and surveillance of retinopathy of prematurity (ROP), evaluation of treatments for squint and amblyopia.

Visual rehabilitation will be a research focus, too.

"Professor Gary Rubin has been recruited from the United States and he is an expert at rehabilitating people with visual loss. When people lose vision, they start using different areas of their brains and eyes. This could be particularly useful for children. It will help people we can't help medically," said Dr. Khaw.

Stem cells are another exciting avenue, said Prof Khaw. "The Cells for Sight stem cell transplantation facility led by Dr Julie Daniels has just been accredited for human treatment by the Medicines and Healthcare

products Regulatory Agency (UK). This is the first stem cell facility for ocular transplantation to be accredited in the United Kingdom. Corneal stem cell transplantation begins in the next few months. We've also discovered a retinal cell that you can isolate from donor eyes, some of them over 80 years-old, and these cells can be turned into cells with characteristics of the different cells in the retina.

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We are hoping to develop this into a new treatment for retinal diseases in children and adults."

Two Centuries of experience

He notes that Moorfields has treated children from the beginning, 200 years ago, and now it is recognised as a centre of excellence. That reputation is based largely on its landmark achievements and the skill of its staff, including the nursing staff. Nurse Practitioners at the new hospital will have dual qualification in both paediatrics and ophthalmology.

"The Trust offers fantastic training opportunities for all staff," said Anita Aubrey, nurse practitioner at Moorfields.

Care will be centred on the children and their families, with play specialists guiding children through the treatment process. The play specialists will 'play-out' what's happening with the child and use distractional techniques during stressful situations, such as anaesthesia. Parents will be

present when the child goes to sleep and again when they wake up.

"Play specialists are at the heart of child-centred care. They will play a key role in planning and supervising activities with children while in hospital and helping them express their feelings through play," said Isabelle Hamilton-Bower, RN, Lead Nurse for Practice Development at Moorfields.

"The 'play specialists' work

in the new centre will continue throughout the care pathway: Because their role will be peripatetic they will be able to follow the child providing focussed support at each step of the care episode," she said.

Nurse practitioners keep parents informed and instruct them on eye-drop instillation and IOP measurement. Day-cases will form the vast majority of care at the ICEC, but when the family travels a long way they will be able to stay in hostel accommodation on the sixth floor. For children, it all adds up to greater therapeutic gains with less emotional pain.

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