

Paediatric Intensive Care Medicine at The Royal Children's Hospital, Melbourne

Background

The RCH PICU is an 18 bed tertiary intensive care unit that serves the state of Victoria, as well as southern New South Wales, and admits children from all around Australia. We admit around 1300 children annually, and care for children with cardiac disease, multi-organ failure, haematological and oncological disease, major trauma and severe respiratory disease. We provide extracorporeal life support for children with severe circulatory and / or pulmonary failure, and perform interstate retrievals of children on ECMO. In addition we provide temporary renal support (haemofiltration, haemodiafiltration, plasmfiltration) to approximately 50 children per year. Approximately 70% of our admissions require mechanical ventilation. RCH is the state centre for liver transplantation, and bone marrow transplantation.

The Cardiac Surgical service at RCH, performs 500-550 heart operations annually, of which around one quarter are in young infants. We care for all children from South Australia requiring cardiac surgery, as well as infants with complex cardiac disease from other states. RCH is the national centre for paediatric heart transplantation, which incorporates long term ventricular assist device (VAD) support. The majority of Australian newborns requiring surgical palliation of hypoplastic left heart syndrome (20-30 per year), undergo their surgery at RCH.

A distinction is made between Cardiac and General ICU patients, with separate medical teams responsible for their day to day care, but the unit runs as a single large, mixed PICU.

RCH PICU runs the Medical Emergency Team (MET) for the hospital, as well as the Paediatric Emergency Transport System (PETS) for the state of Victoria. The PETS service annually receives around 1000 calls, and delivers approximately 350 retrievals.

There are seven full-time and four part-time consultants, working a split-shift rota. Two consultants are on day shifts Monday to Friday (Cardiac and General) and one on day shifts at weekends. The night shift is covered by a different consultant.

Training

The RCH PICU provides training in general and cardiac intensive care to trainees in paediatric intensive care, paediatrics, anaesthesia, adult intensive care, paediatric cardiology and emergency medicine. The unit is one of only 3 in Australia to be fully accredited for 24 months training by the Joint Faculty of

Intensive Care Medicine of Australasia (JFICM), and is one of the 2 centres to hold the annual JFICM Fellowship examinations in Paediatric Intensive Care.

We employ 16 registrars (Fellows) from Australia and overseas, including the UK, Mainland Europe, Canada, India and South-East Asia. Our registrars work a full shift system, and provide continuous cover for emergency retrievals. There is no 'minimum' experience required for our registrars. Some have no previous training in PICU, and others are advanced trainees, or have even completed training, but wish to increase their experience prior to commencing a permanent post.

The Chief Registrar

Each weekday, there is a Chief ICU Registrar on duty. The Chief Registrar(s) are in general the most experienced of the registrar group. The role of the Chief is to support the ICU Consultant, and to provide mentorship and leadership to the registrar team. The Chief Registrar will have the opportunity to conduct ward rounds, to liaise directly with referring medical teams, and to assist and supervise the ICU registrars with procedures, as well as to assist in education and research activities.

The Senior Registrars

The roster generally includes one or two senior registrars on each shift. As well as taking part in patient care, the senior registrar(s) are expected to lead in resuscitations and emergencies; to deliver high-risk transports; to assist the consultant on service; and to play a role in an organisational capacity within the unit (for example, designing the teaching programme, journal clubs).

Senior registrars and Chief Registrars also are given an opportunity to provide senior on-call cover for ICU (with supervision) in accordance with the advanced training requirements of the JFICM occasions.

Teaching

There are two formal (protected) teaching sessions per week, as well as informal bedside teaching when on clinical service. Teaching sessions include clinical presentations, technical sessions, audits, morbidity and mortality, journal clubs, and ECLS reviews. Registrars are encouraged to participate in these sessions, and to conduct them. They are expected to attend teaching when not on night shifts or annual leave.

Research Projects

All registrars are encouraged (and expected) to undertake a research or audit project during their fellowship at RCH. This can be a retrospective review, or a prospective study, or a case series. All projects will be supervised by a PICU consultant. We also encourage trainees to consider a formal research period, with

a view to a higher degree (MD or PhD). We have limited funding to enable research higher degrees.

Mentorship

ICU registrars are paired with a consultant mentor. The mentors and trainees should meet within 4 weeks of the trainee starting at RCH, and at 3-monthly intervals (or as often as required) thereafter. The purpose of the mentorship is to set goals at regular intervals during the fellowship; to discuss training or other issues; to assist in research projects; to complete any necessary documentation for the trainees 'parent' training programme; and to provide feedback as necessary.

Enquiries and Applications

It is rarely 'too early' to express an interest. We usually allocate posts between 18 and 24 months ahead of the start date, though occasionally posts become available at shorter notice. For overseas applicants, the absolute minimum time that it takes for the visa and registration to be processed is 6 months, though we begin the process up to 12 months ahead of time whenever possible. If English is not your first language, you are required to pass the IELTS English language examination. A minimum score of 7 is required in each field. However experienced you are, you will not be able to work at RCH without this score. If you are considering applying to RCH, then it is well worth sitting the IELTS ahead of time, so that this doesn't become a problem at the last minute.

If you are interested in working as a registrar in RCH PICU, then please write to us, and send an up to date CV. It is important that we know your career intentions, your preferred start date, and what training you intend to do between the time of applying and starting.

Enquiries

For general enquiries regarding RCH intensive care please contact:

Dr Lara Shekerdeman, Director of Intensive Care: lara.shekerdeman@rch.org.au

For Enquiries regarding training opportunities and the Fellowship program, please contact Dr Johnny Millar, Director of Training: johnny.millar@rch.org.au

Further details of the Fellowship training programme for [intensive care trainees](#), are given in Appendix 1.

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Appendix 1

FELLOWSHIP TRAINING IN INTENSIVE CARE AT THE ROYAL CHILDREN'S HOSPITAL

- Fellows spend a minimum of 6 and a maximum of 24 months in the PICU depending on individual training requirements.
- Fellowships are offered to applicants wishing to pursue careers in intensive care medicine from all over the world. RCH is committed to providing PICU training to overseas doctors who shall contribute to improved services in other countries.
- Many of the Australasian fellows are pursuing Fellowship of the JFICM.
- There is a new intake of Fellows twice a year (February and August).

Aims of training

To provide the Fellow with:

- an individually tailored training programme appropriate to each Fellow's experience and goals
- a sound theoretical knowledge base in normal physiology and pathophysiology of critical illness in children
- Up to date knowledge of treatment and technologies used in paediatric Intensive care
- clinical experience in the resuscitation, assessment and treatment of critically ill children
- clinical experience in paediatric transport medicine
- the opportunity to perform clinical research relevant to the practice of Paediatric Intensive Care

Fellowship Programme

Induction and Orientation

New Fellows receive an induction period of 3 days, consisting of lectures and workshops to orientate them to the PICU and PETS. During this time they have no clinical duties.

Clinical exposure and responsibilities

During their training all Fellows will spend equal time caring for cardiac and general ICU patients. PETS duties are shared between all Fellows, and trainees will spend some time at night on call specifically for PETS trips.

Clinical responsibilities are all undertaken under direct supervision of a consultant intensivist, with increasing responsibility and autonomy being granted to more experienced trainees. Senior trainees (those with more than 2 years experience of PICU at RCH level) may be offered the opportunity to take first-call responsibility for the unit, in accordance with advanced training requirements of the JFICM.

Cardiac Intensive Care

- Assessment, admission and initial management of newly diagnosed congenital heart disease.
- Post-operative management of cardiac surgical patients, including cardiac transplantation.
- Medical management of heart failure and severe dysrhythmias.
- Initiation and ongoing management of VAD and ECMO for cardiac and respiratory disease.

General Intensive Care

- Assessment, admission and initial management of critically ill children.
- Post-operative management of neurosurgical, orthopaedic, ENT, general surgical patients, liver and intestinal transplant recipients
- Central role in the RCH Trauma Team, responding to high-level trauma calls in the Emergency Department
- Providing advice, assessment and practical help (vascular access, procedures) to other clinical services and areas within RCH.

- Responding to emergency calls for assistance including cardiorespiratory arrest as part of the Medical Emergency Team. This team covers all clinical and non-clinical areas of the hospital campus.

PETS

Handling telephone calls for advice from outside doctors and hospitals. Coordinating and undertaking transfer of critically ill children from referring centres in Victoria and neighbouring states.

Teaching

- A core teaching programme runs annually and is delivered during 2 hours of didactic lectures each week. The curriculum is based on the knowledge required to pass the written component of the JFICM fellowship examination.
- Weekly themed meetings discuss cases in a more interactive fashion. These rotate through the topics of ECMO, Clinical Ethics, Clinical Nutrition, PETS, Morbidity and Mortality and Case presentations. Trainees are required to present cases at these meetings, with the discussion chaired by a consultant intensivist or expert in that field.
- Trainees are given protected time to spend in Anaesthesia where they gain experience in all aspects of airway management under the supervision of a Consultant Anaesthetist. This is tailored to the experience and requirements of individual trainees.
- The annual ECMO course runs over 5 days and is designed to train PICU senior nurses who wish to become ECMO specialists. Fellows training in PICU are encouraged to attend this and the twice yearly ECMO study days.
- Exclusive hands-on echocardiography experience is provided by consultant cardiologists in the ICU each week. In addition, Trainees are encouraged to attend both the weekly Echocardiography Meeting and Cardiac Scheduling Conference in the Cardiology Department.

Research

Trainees spending 6 months or more undertake a research project under the supervision of a consultant intensivist. These range from simple retrospective reviews to designing and running clinical trials within the PICU, depending on available time and experience of the trainee.

The PICU has strong links with the Murdoch Children's Research Institute, the Australia and New Zealand Heart Research Centre and The University of Melbourne. A small number of senior trainees undertake a higher degree, performing research based in the PICU.

Mentoring and Assessment

Trainees are assigned a consultant mentor at the beginning of their period of training. At an initial meeting the trainee's expectations and requirements are determined and a programme is devised to fulfil these. There are monthly meetings between trainees and mentors to ensure that these are being met.

Trainees are assessed by each consultant every 3 months and their progress is discussed by the consultant group. The mentor then provides feedback to the trainee, and they devise an approach to any identified problems or deficiencies. The consultant mentor performs a formal 6 or 12 monthly appraisal for each trainee, depending on the period of training.

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