David Philip Inwald FRCPCH FFICM FHEA PhD October 2020

Specialty:	Paediatrics
Subspecialty:	Paediatric Intensive Care
GMC registration:	Full – number 3460313. Specialist registration in Paediatrics (2003)
Place of work:	Addenbrooke's Hospital, Hills Road, Cambridge CB2 0QQ, ENGLAND
Occupation:	Consultant in Paediatric Critical Care Medicine
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h-index:	23

EDUCATION

1984-1987	BA (Hons) degree Emmanuel College, University of Cambridge Medical Sciences Tripos Part 1A (I) and 1B (IIi), Theological Studies Part 2 (IIi)
1987-1990	MB BChir degrees University College London School of Medicine
1993	MRCP (UK) diploma (Adult General Internal Medicine) Royal College of Physicians, London
1994	Diploma of Child Health Royal College of Physicians, London
2004	PhD in Child Health – "Role of platelet CD40L in inflammation" Medical Research Council Clinical Training Fellow Immunobiology Unit, Institute of Child Health, University College London Supervisor: Professor Nigel Klein
2006	MA in Medical Law and Ethics (Merit) King's College, London
2014	Certification in congenital heart disease echocardiography, European Association for Cardiovascular Imaging
2019	FHEA - Fellow of the Higher Education Academy Higher Education Academy, United Kingdom

MEDALS AND HONOURS

2014	Ivan Houghton Award	Triservice Anaesthetic Society
2012	Pask Award	Association of Anaesthetists of Great Britain and Ireland
1988	Sidney Long Prize in Surgery	University College London Medical School
1987	Glover Prize for Hebrew	Emmanuel College, Cambridge University
1987	Cambridge University Hebrew Prize	Cambridge University
1986	Thorpe Exhibition	Emmanuel College, Cambridge University
1985	Senior Hooper Scholarship	Emmanuel College, Cambridge University

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Since 1993 – Member of the Royal College of Physicians
Since 2006 – Fellow of the Royal College of Paediatrics
Since 2014 – Fellow of the Faculty of Intensive Care Medicine, Royal College of Anaesthetists
Since 2019 – European Paediatric Life Support Instructor

CONSULTANT AND LEADERSHIP POSITIONS

Feb 2020 – present	Consultant Paediatric Intensivist, Addenbrooke's Hospital, Cambridge University Hospitals NHS Trust, Cambridge, England
Oct 2017 – Dec 2019	Paediatric MSc Course Director, Imperial College London
Sept 2012 – Nov 2012	Consultant Intensivist, 22 Field Hospital, Op HERRICK, Camp Bastion, Afghanistan.
Aug 2008 – present	Service Director, Paediatric Intensive Care Unit, The Harley Street Clinic, 35 Weymouth Street, London, England
Apr 2007 – July 2009	Service Director, Paediatric Intensive Care Unit (PICU), St Mary's Hospital, London, England
Jan 2005 – Jan 2016	Honorary Consultant, Children's Acute Transport Service, London, England
Jan 2005 – Dec 2019	Consultant Paediatric Intensivist and Paediatrician with an Expertise in Cardiology, Imperial College Healthcare NHS Trust, Honorary Senior Lecturer in Paediatrics, Imperial College, London, England

HIGHER PROFESSIONAL TRAINING

I held training posts in adult, paediatric and neonatal medicine, paediatric intensive care and surgery and anaesthesia. I have wide experience in neonatal and paediatric critical care medicine, including the medical management of neonates, infants and children following general and cardiac surgery. I am accredited as having completed the training programme in Paediatric Intensive Care Medicine with the Royal College of Anaesthetists.

LEADERSHIP AND MANAGEMENT ACHIEVEMENTS

Clinical information systems and informatics

PICU Information Systems Lead, 2009-2019 (St Mary's). Implementation and maintenance of the ICU electronic patient record and standalone PICU database. Responsible for collection and validation of all PICU demographic, diagnostic, severity of illness and activity data for submission to the national PICU audit (PICANet) and to NHS commissioners.

Analysis and management of risk and development of plans and policies

Chaired serious incident investigation panels. Chair of bimonthly paediatric mortality review meetings. Structured judgment reviewer for paediatric deaths (St Mary's). Reviewed and rewrote numerous PICU clinical guidelines (St Mary's and Addenbrooke's Hospital).

Achievement of significant improvement in patient safety

Implemented BedsidePEWS, a Paediatric Early Warning Score (PEWS) at St Mary's, resulting in significant reductions in unexpected PICU admissions from the inpatient paediatric areas. This required development and delivery of a teaching programme for nursing and medical staff, design of the PEWS charts and development of a locally applicable escalation tool.

Innovation in service delivery – Harley Street Clinic
Set up General Paediatric Intensive Care at Harley Street Clinic in 2008 – in a 13 bedded PICU previously specializing in cardiac work only. Lead on recruitment of medical staff, liaison with nursing staff and consultants from paediatric subspecialties, introduction of treatment protocols and member of the Medical Advisory Committee.

Innovation in service delivery - Paediatric Cardiology Lead, St Mary's Hospital
Development and delivery of St Mary's service. Working across two organisations as the Link Consultant with the Paediatric Cardiology Service at the Royal Brompton Hospital. Fortnightly clinic, support for inpatient neonatal and paediatric areas on the St Mary's site. Perform approximately 100 inpatient echos every year, organising review of these scans as required.

RESEARCH ACTIVITY AND ACHIEVEMENTS IN LAST 5 YEARS
Clinical Studies and Trials
Chief Investigator, PRESSURE. 5 year project including multicentre RCT to evaluate the clinical and cost effectiveness of using a more permissive blood pressure target to guide careful titration of vasoactive agents in critically ill children with hypotension: PRotocolised Evaluation of permiSSive blood pressure targets versus Usual care. August 2020 – January 2025.

Chief Investigator, FiSH. Fluids in Shock. Chief Investigator on NIHR HTA grant to support an 18 month project combining a feasibility and external pilot study to inform the design of the Fluids in Shock (FiSh) trial, a proposed multicenter randomised controlled trial of different size fluid bolus therapy in community acquired paediatric septic shock. December 2015 – June 2017.

Chief Investigator, Prevalence of PTSD, moral distress & burnout amongst PICU staff. Paediatric Intensive Care Society, UK sponsored survey looking at psychological morbidity in PICU staff. January 2017 – April 2018

Chief Investigator, FiSh. Fluids in Shock. Principal Investigator on NIHR HTA grant to support an 18 month project combining a feasibility and external pilot study to inform the design of the Fluids in Shock (FiSh) trial, a proposed multicenter randomised controlled trial of different size fluid bolus therapy in community acquired paediatric septic shock. December 2015 – June 2017.

Local Principal Investigator, DEPICT. Critically ill children and young people: do national Differences in access to Emergency Paediatric Intensive Care and care during Transport affect clinical outcomes and patient experience? The DEPICT study. CI Dr Padmanabhan Ramnarayan (Children's Acute Transport Service), January – December 2018

Local Principal Investigator, SANDWICH. Sedation and Weaning in Children. A cluster-randomised stepped wedge (SW) clinical and cost-effectiveness trial of a sedation and weaning protocol. CI Professor Bronagh Blackwood (Queen's University, Belfast). January 2018 for 20 months.

Local Principal Investigator, NEUROPACK. An observational study of Neuro-developmental Prognosis After Cardiac arrest in Kids. CI Dr Barney Scholefield (Birmingham Children's Hospital), November 2017 for 21 months

Local Principal Investigator, OxyPICU. Pilot randomised controlled trial of different oxygenation thresholds on PICU, Safety and feasibility of a clinical trial of permissive hypoxia in paediatric critical illness. CI Professor Mark Peters (Institute of Child Health, London), March – September 2017.

Local Principal Investigator, FEVER. Feasibility study for randomised controlled trial of different temperature treatment thresholds on PICU, CI Professor Mark Peters (Institute of Child Health, London), April – September 2017.

Local Principal Investigator, PARDIE. Paediatric Acute Respiratory Distress Incidence and Epidemiology study. UK CI Dr John Lillie (Evelina Children's Hospital). Overall CI Robinder G. Khemani (Children's Hospital Los Angeles, CA, USA). November 2016 – September 2017 *Local Principal Investigator, OSTRICH.* Optimising effectiveness and minimising toxicity of intravenous salbutamol in children with acute asthma. CI Dr Sandra Walsh (Great Ormond Street Hospital for Children), May 2015 – July 2016

Local Principal Investigator, EPOCH. Evaluation of Processes of care in Children in Hospital - a cluster randomized trial of a bedside Paediatric Early Warning System (PEWS). CI Professor Chris Parshuram (Toronto SickKids, Canada). October 2012 - March 2014

Chair, Data Monitoring and Ethics Committee, CLOSED. Clonidine for sedation in PICU. CI Dr Antje Neubert, Erlangen University, Germany. 2015 – present. European randomised controlled trial of clonidine vs midazolam for sedation in PICU.

Member, Data Monitoring and Ethics Committee, SCARF. Study of early Continuous Positive Airways pressure in Acute Respiratory Failure. CI Professor Mark Peters (Institute of Child Health, London). 2013 – 2016.

Patient safety
Patient safety in Acute Paediatrics and PICU – collaborations with the Imperial Centre for Patient Safety and Service Quality. MSc students supervised with research looking at prescribing safety, misdiagnosis and a case notes review looking at causes of death in PICU.

Inflammation/sepsis
Co-Investigator, EUCLIDS (European Union Childhood Life threatening Infectious Diseases). Genetics of disease susceptibility and severity: Co-investigator on EU FP7 grant with CI Professor Mike Levin, Imperial College London. 5-year FP7 project funded by the European Union (http://www.euclids-project.eu/home).

Cardiovascular Physiology – Supervised two student Cardiovascular Sciences BSc projects, looking at predictors of fluid bolus responsiveness in critically ill children.

Other
Member of the Paediatric Intensive Care Society Study Group (PICS-SG). Reviewed grants for the National Institute for Health Research, the Medical Research Council, Great Ormond Street Hospital for Children Charity, Temple Street Hospital, Dublin. Regular Reviewer for the following journals: Intensive Care Medicine, Critical Care, Paediatrics and Archives of Disease in Childhood. On the Reviewers' Board for Intensive Care Medicine.

GRANTS IN LAST 5 YEARS
PRotocolised Evaluation of permiSSive blood pressure targets versus Usual caRE (PRESSURE): Chief Investigator. Co-Investigators – Professor Mark Peters, Professor Padmanabhan Ramnarayan and Dr Sam Ray (GOSH/UCL), Dr Barney Scholefield (Birmingham), Dr Joseph Manning (Nottingham), Dr Zia Sadique (LSH&TM), Professor Kathy Rowan, Professor David Harrison, Dr Karen Thomas, Mr Paul Mouncey (ICNARC) and Mr Dermot Shortt (PPI rep). NIHR HTA – 2019: £1 716 166

Fluids in Shock (FiSh). Chief Investigator. Co-investigators Prof Mike Levin, Dr Simon Nadel (Imperial), Dr Mark Peters (UCL), Dr Mark Lyttle (Bristol), Professor Kathy Rowan, Dr David Harrison, Dr Paul Mouncey (ICNARC). NIHR HTA – 2015: £519 294

TEACHING ACTIVITY

Undergraduate: I regularly taught and examined Imperial medical students in Paediatrics, including teaching ward rounds, ethics and law and Mini CEX and PACES assessments. Supervision of student BSc projects in cardiovascular physiology.

Postgraduate: Course Director (2017 – 2019) of and regular lecturer (2016 – present) on the Imperial Paediatric MSc course. Module Lead, two day postgraduate course in Medical Law and Ethics in Paediatrics at Imperial College, now incorporated into the MSc programme, with excellent participant feedback. Previous regular lecturer on Pan Thames PICU training programme for junior doctors, for which I have also written modules in respiratory failure, ventilation and research. Paediatric and Hospital Grand Rounds at St Mary's.

Pastoral care: I have been a Personal Tutor to Imperial medical students for last 6 years until December 2019. I looked after a group of medical students from Year 3 to finals, dealing with pastoral issues, career advice and support.

Research supervision: Supervision of numerous junior doctor research projects and MSc projects, at Imperial College, St George's, NorthWestern University (USA) and the Institute of Child Health.

Authored chapters in major UK textbooks of paediatrics for undergraduates and postgraduates (see below).

MEDICOLEGAL

My undergraduate degree contained a significant philosophy component and I have an MA in Medical Law and Ethics from King's College London. I have published work on end of life care in children and on military medical ethics, with particular emphasis on triage and resource allocation in the austere environment. I have provided expert witness reports to the Family Division of the High Court on end of life cases in children, to HM Coroner on causation in unexpected deaths in children and in medical negligence cases.

SCIENTIFIC PUBLICATIONS

Book chapters

1. Wilson C and **Inwald DP.** Paediatric Emergencies, chapter in Illustrated Textbook of Paediatrics, *eds* Lissauer T and Carroll W. Elsevier, Oxford, UK, 2018.

2. Sinitsky L, Marsh M and **Inwald DP.** Paediatric Emergencies, chapter in MRCPCH Mastercourse – The Science of Paediatrics, *ed* Lissauer T. Royal College of Paediatrics, London, UK, 2016.

3. **Inwald DP**, Peters MJ: Emergency Medicine, chapter in the Great Ormond Street Illustrated Textbook of Paediatrics, *ed* Marks S. Manson Publishing, London, UK, 2016.

4. Akinkugbe O, **Inwald D** and New H. Patient consent in children, chapter in All Blood Counts, *ed* Thomas D, TFM publishing, Shropshire, UK, 2016.

5. Easby D**, Inwald DP** and McNicholas JJK. Ethical challenges of deployed critical care, chapter in Combat Anesthesia, *ed* Buckenmeier C. Borden Institute, Fort Detrick, MD, USA. 2015.

6. de Munter C, Cooper M, Sinha R, Ramnarayan P, **Inwald DP**, Nadel S, Habibi P. Intensive Care, chapter in Paediatric Emergencies: Seizing the Golden Hours, *ed* de Munter C. Imperial College Press, London, UK. 2015

7. **Inwald DP** and Nadel S. Infectious Diseases, chapter in the Oxford Handbook of Paediatric Intensive Care, *eds* Ali T et al, Oxford University Press, Oxford, UK. 2010

8. **Inwald DP**, Peters MJ, Petros AJ: Emergency Medicine, chapter in the Great Ormond Street Illustrated Textbook of Paediatrics, ed Prof S Strobel, Manson Publishing, London, UK. 2007

+ 96 peer-reviewed publications in scientific journals, details available on request.

Signed

Dr David Inwald