UK Trainee-Led Paediatric Governance Collaboratives – Improving the Lives of both Trainees and

Children

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Abstract

Research is vital to paediatrics, however many trainees feel there is a deficit in their opportunities, experience and exposure in this area. Three training regions in the UK – the West Midlands, Wales and Peninsula have recently started region-wide, trainee-led research and governance collaboratives aimed at improving trainee access and education in research, undertaking good quality, multi-centre audit, quality improvement and pilot projects in collaboration across the regions and implementing change.

We report on the experiences, benefits and challenges of these trainee collaboratives (Paediatric Research Across the Midlands, PRAM; Wales Research and Education Network, WREN; Peninsula Trainee Research Audit and Innovation Network, PenTRAIN) including a trainee survey looking at how these initiatives have improved skills in conducting multi-centre prospective studies, team working skills, leadership, understanding of statistics and manuscripts and presentation skills. We also describe how collaboration with colleagues and participation in projects can benefit trainees in a wider sense of purpose and help to encourage morale, as well as what can be learned as paediatric training moves forward.

Introduction

Although audit is mandatory, most paediatric trainees generally have limited exposure to multi-centre projects or research. The proportion of academics within the UK paediatric consultant workforce fell from 11.3% to 5.9% between 2000 - 2011[1], and <10% of senior trainees now have a higher research degree, compared to 1/3rd of consultants >50 years old[2]. Both reported and personal experience indicate most paediatric trainees are both interested in and wish to perform research. The new RCPCH curriculum, Progress encourages paediatric trainees and trainers to seek out research (Domain 11; Research)[3], with previously elicited barriers being a lack of academic culture, diminished opportunity and time constraints in training programmes and work schedules[4].

In recent years, increasing focus has been replaced on collaborative, team-based audit and research. Other specialities have set up trainee-led collaboratives, providing a framework within which motivated trainees can deliver better audit and research projects[5]. Examples include the West Midlands Research Collaborative (surgical network) and the South West Anaesthesia Research Matrix (SWARM, anaesthetic network)[5,6].

We report the experiences, benefits and challenges of three newly formed paediatric trainee collaboratives (Paediatric Research Across the Midlands (PRAM); Welsh Research and Education Network (WREN); Peninsula Trainee Research Audit and Innovation Network, (PenTRAIN), including a survey exploring how these initiatives have improved skills in conducting multi-centre projects, team working, leadership, understanding of statistics and manuscripts and presentation. We also describe how collaboration with colleagues and participation in projects benefits trainees in a wider sense, helping to encourage morale, and lessons learned. Interestingly, despite forming separately, these collaboratives have common motivations, aims and challenges.

How We Work

Table 1 shows the aims and structures of the three networks.

Table 2 demonstrates the topic breadth covered and projects undertaken so far by the three groups. All groups currently have ongoing projects, with planned journal submissions for completed projects.

Most projects so far have been:

- Multi-centre, prospective clinical audit

- Quality improvement projects including creation and implementation of guidelines

- Surveys of practice

Research is a project designed to gain new knowledge and usually requires ethical approval. A service evaluation is a way to define or measure current practice in a service but does not have specific standards to compare to. However, audit compares practice with known set standards to measure how well practice measures up[7]. These results can both be used to define areas of good practice and areas of improvement. These possible improvements may be undertaken as part of a quality improvement project and the service or practice re-measured to quantify the impact made by the QIP. Audits and QIPs are usually registered with the governance departments of local trusts.

Trainee Experiences

To date PRAM and WREN have each involved 50 trainees in projects, of estimated totals of 240 (21%) and 140 (35%) trainees respectively, whilst PenTRAIN has involved 21/82 (26%) Peninsula trainees.

A 'Google Forms'[8] snapshot online survey in July 2018 targeted 120 PRAM, PenTRAIN and WREN members (those signed up for emails, project participants or attendees at an education day). We received 35 responses (29% response rate); 18 (51%) from PRAM, 14 (40%) from WREN and 3 (9%)

from PenTRAIN. All were trainees of ST3 grade or above; 6 (17%) were ST3 trainees, with the rest evenly split between ST4-8 registrar levels. Furthermore, 31 (88%) trainees had no formal research experience.

Of those surveyed, 29 (83%) had attended a teaching session or meeting, 27 (77%) had participated in data collection, 20 (57%) had been involved in a project steering group, 15 (42%) had been a project leader at some time, 11 (31%) were committee members and 4 (11%) were currently or had been the organisation chair (where multiple roles could be selected).

In response to: 'to what degree has your involvement in a network increased your confidence in the following domains', the percentage of trainees responding with 'moderately' or 'significantly' (on a rating scale of 'not at all/ slightly/ moderately/ significantly') was as follows: Conducting a multi-centre prospective study: 26 trainees (74%); Team working skills: 25 (72%); Leadership: 17 (48%); Understanding of statistics: 16 (46%); Critical appraisal skills: 16 (16%); Understanding of writing a manuscript: 15 (43%); Presentation skills (poster or oral): 13 (37%).

Free text positive responses included: improved awareness of research opportunities, reading articles, networking and camaraderie, enthusiasm within training and for quality improvement; feeling like collaborative projects have more impact and achieving a common goal.

The level of trainee involvement indicates that most trainees wait until finishing their membership (MRCPCH) exams before considering such projects. Many consider positive skills gained (especially in teamwork and leadership) are useful for all aspects of career progression, as referenced in the new RCPCH curriculum (Domain 6; leadership: Domain 8; quality improvement)[9,10]. Those who did not respond, however, may have been because they did not identify with any of these positive traits, although the response rate is representative of online surveys[11].

Challenges

Shift work and trainee commitments over large geographical areas challenge efficient communication and project co-ordination, and all networks use email, social media and video-conferencing to address these.

One region (the West Midlands) provides a one-day good clinical practice GCP training course as part of protected regional teaching for ST4-8 trainees every 2 years, as this has been perceived as a barrier to participation in clinical research.

Sustainability is key, as founding trainees move towards consultant posts or other demands take precedence, so it is important to have in-built continuity. Involving junior trainees and having co-leaders of projects encourages a non-intimidating environment, equipping them to lead on future projects. A rolling committee structure is another way to address this.

Getting buy-in from trainees at all grades, when much of this work is done in their free time, is essential and has been addressed by using regional teaching days, a blog, and demonstrable support and promotion by the local deaneries.

As project ideas evolve, ethical approvals funding may be required, and identifying sources and supporting applications will require senior input. Making the step to research-activity and implementing change is key. Involvement from local schools of paediatrics and consultants has helped establish the networks with advice on designing and leading an achievable project. Support from bodies such as the Clinical Research Networks (CRNs) or potentially the RCPCH are also areas to explore.

Future Directions

We are currently undertaking a joint prospective multi-centre audit of hypertension detection in children and PRAM are applying for funding for a mixed-methods project evaluating presentations of self-harm. WREN are involved with developing a paediatric research network funding bid for Welsh

Government, and a novel research project is under development. Further work could include

involvement in trial-related research activities, embedding these groups into local schools and

ideally within national paediatric training. This will hopefully empower and encourage trainees to

develop their interests and experiences in research, audit and clinical governance.

Websites:

PenTRAIN - https://sites.google.com/a/nihr.ac.uk/pentrain/home @UKPenTRAIN

PRAM – www.pramnetwork.com @PRAMNetwork

WREN - www.wrenpaediatrics.com @WRENpaeds

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Table 1 – Aims and Objectives of the three Networks

Network name	Welsh Research and Education Network (WREN)	Paediatric Research Across the Midlands (PRAM)	Peninsula Trainee Research Audit and Innovation Network (PenTRAIN)
Established (year)	2014	2015	2016
Aims	- Deliver a trainee-led, consultant-supported network - Enable trainees to lead multi-centre research, audit and service evaluation projects in Wales - Provide an ongoing programme to promote research awareness and education	-Establish a regional network of paediatric trainees conducting multi-centre audit and research with high impact potential - Allow trainees to continue their involvement in projects as they migrate around the region for training - To provide training and education in research	- To promote research, quality improvement (QI) and audit among paediatric trainees - Inspiring paediatric trainees to advance the care of children through research - Make change though multicentre projects, demystify research and "add value" to paediatric training
Network Structure	Trainee-run executive committee with a consultant network across nine participating Paediatric and Neonatal units.	Trainee-led committee to identify subgroup interests amongst trainees and consultant support provided as needed.	Network links and consultant support at each hospital site.
Project Structure	Multi-centre projects with trainee lead. Local data collectors identified by consultant network in each hospital.	Multi- centre projects run by steering group. Local leads help with data collection at each regional centre. Project recognised as governance activity for ARCP	Trainee project coordinator who liaises with local links for data collection.
Technology	Website Blog – 1000 monthly visitors covering trainee experiences, conference reports, journal club articles and projects Twitter Biannual Newsletter	Website Twitter Newsletter	Website Twitter
Outreach/ trainee involvement	Bi-Annual day for research education, project selection and result feedback	Sandpit and regional teaching involvement	Annual meeting as part of a local NIHR study day for project discussion

Table 2 – Completed Projects Across WREN, PRAM and PenTRAIN Networks

Project Title	Presentation of Results	Service Changes & Publications
Welsh Research and Education Network (WREN)		
All Wales Audit into the Management of Respiratory Distress Syndrome	British Association of Perinatal Medicine Scientific Meeting 2015 Welsh Paediatric Society 2015 Wales Neonatal Network Audit Day 2015	Led to creation of new Wales Neonatal Network Guideline
Are We Using Chest Radiographs Appropriately?	Welsh Paediatric Society Meeting 2015 Royal College of Paediatrics and Child Health Conference 2016	Published abstract in Archives of Disease in Childhood 2016
Survey into the Practice and Beliefs Regarding Delayed Cord Clamping	British Association of Perinatal Medicine Scientific Meeting 2016	
Indications and Timings of CT Head Scans in Children with Head Injury	Welsh Paediatric Society Meeting 2016	
Referral to Audiology and Public Health following diagnosis of meningitis in children	British Association of Paediatricians in Audiology Regional Meeting 2017- Won National Prize	
Delivery of Botox Inject for Children with Spasticity	Welsh Paediatric Society Meeting 2017 Poster Presentation at British Paediatric Neurology Association Conference 2017	Abstract published in Developmental Medicine and Child Neurology 2018
Antibiotic use on the Postnatal Ward: Striking the Balance	Welsh Paediatric Society Meeting June 2018 Wales Neonatal Network Audit Day 2018 International Neonatology Association Conference, Ghent, Belgium June 2018	
Paediatric Research Across the Midlands (PRAM)		
Tackling the childhood obesity crisis – acute paediatricians are not playing their part	Oral presentation at RCPCH conference 2016	Published letter in Archives of Disease in Childhood Local quality improvement education programme delivered
Parental survey of vitamin D supplementation in children	Poster presentation at RCPCH conference 2017	
Early onset neonatal sepsis: are we following NICE guidance?	Poster presentation at REASON national neonatal conference 2017	
Neonatal pre-medication for intubation audit	Poster presentation at RCPCH conference 2018	
Child sexual abuse (CSA) detection during child protection medical examinations	Oral presentation at British Association of Community Child Health – West Midlands Winter Meeting 2018	
Use of High Flow Oxygen Therapy in Bronchiolitis	Poster presentation at EAPS 2018	
Use of Aciclovir in Encephalitis	Poster presentation at EAPS 2018	
Peninsula Research, Audit and Innovation Network (PenTRAIN)		
IV fluids in children – NICE guidelines	Oral Presentation at the south west Paediatric Club 2016	
A survey exploring attitudes, skills and willingness of paediatric trainees to manage children and young people with acute mental health presentations in secondary care	Oral Presentation at the south west Paediatrics club 2018	

	Oral Poster presentation at the Royal college of Psychiatrists conference 2018	