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Top tips for incorporating research

By Zoë Brookes,¹ Ian Mills,² Robert Witton³ and Ewen McColl⁴

The COVID-19 pandemic has had a significant impact on all aspects of society, with dentistry facing specific challenges in maintaining access to dental services within a safe environment.

One of the key challenges in early 2020 was the lack of knowledge and understanding around the risks of transmission of a novel coronavirus in the dental setting. The lack of credible research, particularly within the primary care setting, led to challenges in developing reasonable and informed guidance to support the profession. As a consequence, research from other settings was translated to dentistry which was viewed by some as inappropriate. Dental academics were keen to contribute, but with limited research capacity, particularly within primary care, the lack of empirical evidence undoubtedly hampered progress in dealing with the threat of coronavirus.

In the UK, over 90% of dental care is provided within general dental practice, yet only 2% of current published research relates to primary care.¹ Evidence-based dentistry (EBD) is a vital aspect of delivering high standards of care for our patients, and this should be informed, wherever possible, by high-quality empirical research. The majority of research is conducted in academic settings or secondary care, and this may not necessarily translate to primary care.²

Primary care dental services provide the ideal environment for clinical research given the wide range of patients and applicability of research findings to real world circumstances. In our experience, busy practitioners often find it difficult to get going with research in practice, whilst recognising the value of being involved in research. In this short paper, we hope to give some tips on how to get involved in research in primary dental care.

1. Why bother?

Working in general practice can be extremely challenging, particularly at the present time. The thought of taking on additional responsibilities, such as research, may seem like an unnecessary burden. However, there are many positives in getting involved with research in primary care and some of the benefits include:

- Developing new skills and knowledge
- Working as part of a wider team
- Involvement of staff and patients
- Variety within your working week
- Professional fulfilment through advancing knowledge of the profession
- Potential for future career advancement including publication
- Point of difference in terms of practice promotion or staff recruitment.

2. What level of involvement?

You can become 'research active' at many different levels, and for many this may be a convenient way to get started and make contact with more established researchers.

- **Research participant** – get involved as a participant in an existing study or trial. Many researchers are keen to recruit participants in a variety of projects
- **Data collector** – participate in a study by collecting data for a colleague, perhaps through a questionnaire at the practice or collection of clinical data
- **Collaborator** – more active involvement as a member of the research team, perhaps providing clinical expertise and advice or interpretation of results and their relevance to the clinical setting
- **Clinical lead (CL)** – direct involvement in the design of the study including funding application and research and ethics, as well as clinical input, analysis, interpretation of findings
- **Principal investigator (PI)** – responsible for all aspects of the study and likely to be undertaken by experienced researcher or someone in academic post.

3. Getting started

It can be difficult to know where and how to start, and the importance of professional networks cannot be understated. 'Local knowledge' is always a good place to start and colleagues will often be able and willing to signpost you accordingly. Groups, such as the LDC, BDA Section, FGDP/CGDent, IPG, will often be able to help.

- **Find a supportive practice** – it can be difficult to conduct research in isolation, particularly if your practice is not engaged or supportive. There are others who are, and colleagues will often be delighted to act as a mentor. Dental body corporates will potentially have research opportunities due to their size and management structure, and it is always worth enquiring
- **Dental school** – the majority of dental research is linked to universities or dental schools, and many academics are keen to collaborate with colleagues in primary care. It is worth contacting the research lead or a named academic at the School, and you may be pleasantly surprised at just how keen they are
- **University** – contact your nearest university as they may be grateful of your input with ongoing research projects by providing clinical expertise, also in non-dental disciplines
- **College of General Dentistry** (formerly FGDP UK) – CGDent provides support, advice and information on research in general dental practice (<https://cgdent.uk/research/>). An introduction to research for primary dental care clinicians was previously published in 2010 and can be accessed online: <https://cgdent.uk/standards-guidance/>
- **Society for Academic Primary Care (SAPC)** – the SAPC has a special interest group 'Academic Primary Dental Care Group' which provides an academic platform to nurture academic careers in primary dental care: <https://sapc.ac.uk/special-interest-group/dental-care>



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- **Centre for Evidence Based Dentistry (CEBD)** – excellent resource and often runs introductory short courses on research: <https://www.cebd.org/>
- **National Institute for Health Research (NIHR)** – the NIHR provides extensive information, advice and support on research in addition to providing funding for training opportunities: <https://www.nihr.ac.uk/explore-nihr/specialties/primary-care.htm>
- **Local Clinical Research Network (CRN)** – approach your local CRN for advice and support. The NIHR Clinical Research Network provides researchers with the practical support they need to make research happen. It supports the set up and delivery of clinical research in the NHS and in other health and care settings through the Study Support Service, including staff once funding has been secured: <https://www.nihr.ac.uk/explore-nihr/specialties/oral-and-dental-health.htm>. There may be other local groups such as Northern Dental Practice Based Research Network which can offer advice and support in getting research going in your practice: <https://blogs.ncl.ac.uk/northerndentres/>
- **Research groups/societies** – join research societies, present your work, get feedback and meet like-minded research enthusiasts who will help you make things happen; for example, the IADR/BSODR (<https://bsodr.org.uk/>), British Society of Periodontology and Implant Dentistry (<https://www.bsperio.org.uk/>), ADEE (<https://www.aadee.org/>)
- **Existing trials** – there are several national multi-centre randomised controlled trials currently taking place in primary dental care, eg *Pulpotomy for the management of irreversible pulpitis in mature teeth (Pulpotomy for Irreversible Pulpitis – PIP Trial)* and *ENHANCE-D – Enhancing Dental Health Advice*. Search the NIHR site for ‘dental’ within <https://fundingawards.nihr.ac.uk/>. Such studies can only take place if primary care dentists are willing to take part in research and they need you.

4. Training

Dental graduates and foundation trainees are likely to have knowledge and experience of searching the literature, critical reading and clinical audit, but may not have been exposed to research. There are an increasing number of academic opportunities for the dental team, but they are often poorly understood and the opportunities under-appreciated. Your own knowledge and experience should not be undervalued, and you can make a significant contribution in helping translate research into clinical practice:

- **Intercalated degree** – an intercalated degree during your undergraduate training (BSc or MSc) will give you basic research skills training, a more competitive CV and a taste of whether research is for you
- **NHS Good Clinical Practice (GCP) training** – if you are interested in research, it is well worth undertaking this training at an early stage: <https://www.nihr.ac.uk/health-and-care-professionals/learning-and-support/good-clinical-practice.htm>
- **Academic Dental Foundation Training (DFT)** posts are available to combine DFT with basic research training and information

is available at <https://www.copdend.org/postgraduate-training/dental-foundation-training/872-2/>. Research opportunities have also been created within Dental Core Training (DCT). See <https://www.copdend.org/postgraduate-training/header-dental-core-training/>

- **NIHR** – offer a part-time integrated training pathway within an academic institution, whilst continuing clinical practice, as an Academic Clinical Fellow (ACF) with 25% protected educational/research time for masters level training: <https://www.nihr.ac.uk/funding/nihr-academic-clinical-fellowships-in-dentistry-2022/28684>; or as an Academic Clinical Lecturer (ACL). The latter requires a PhD but involves further academic and clinical training, with 50% protected educational research time to become established as an independent research leader: <https://www.nihr.ac.uk/funding/nihr-clinical-lectureships-in-dentistry-2022/28686>
- **University** – there are opportunities to undertake part-time masters training in clinical specialist areas, involving an element of research, or doctoral training to gain a PhD whilst continuing to work in primary care. If a PhD is something you could consider whilst working in primary care, send your CV, funding may be available. Experts in your field of interest will also become apparent through your engagement with the literature and looking through university research pages

‘Join research societies, present your work, get feedback and meet like-minded research enthusiasts’

- **Chief Dental Officer’s Clinical Fellow Scheme in England** – the Clinical Fellow Scheme was established in 2017 by the Chief Dental Officer for England. It provides dentists with dental leadership opportunities, who have not held a senior leadership role in dentistry, a unique opportunity to spend 12 months in a national healthcare-affiliated organisation outside of dentistry practice to develop skills in leadership, management, strategy, project management and health policy: <https://www.fmlm.ac.uk/programmes-services/individual-support/clinical-fellow-schemes/chief-dental-officers-clinical-fellow-scheme>

5. Read the literature

- Read dental journals regularly. This will keep you up to date, help develop your critical reading skills, expand your knowledge of research methods, and provide good examples of academic writing
- It can be difficult to keep on top of the literature and you may need to be selective in what you read. *Evidence-Based Dentistry* (<https://www.nature.com/ebd/>) and Dental Elf (<https://www.nationalelfservice.net/dentistry/>) are excellent resources
- Search Medline, PubMed, Embase and other databases regularly on your topics of interest. Topic alerts can be created automatically to keep you up to date on published articles within a particular subject. ▶▶

6. Define your research interest

Oral health research is rich and varied with many topics to explore and methods to utilise: from dental materials to behavioural science; from therapeutics to epidemiology; and from clinical techniques to patient-reported outcomes. The possibilities are limitless, but it will help considerably if you consider the following:

- Choose a topic in which you have some knowledge, interest or feel passionate about
- Develop a research question which is focused and SMART; use 'PICO': <https://www.cebd.org/practising-ebd/question/>
- Base your research interests on real life clinical problems that you have experienced or have relevance to everyday practice
- Remember, despite your passion, only certain areas will get funded. Learn what the research priorities are in dentistry: <https://www.jla.nihr.ac.uk/priority-setting-partnerships/oral-and-dental-health/top-10-priorities.htm> and read the NHS long-term plan: <https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/>. How does your research fit with these?
- Aims and objectives are the most important part of project planning – define these first and conduct clear, focused, hypothesis-driven research, rather than a fishing expedition to see what you might find.

7. Funding

Leading your own research in primary care can be expensive in terms of time and resources, and the majority of research projects require funding. Research conducted within training posts may be funded, such as NIHR, but most projects need to be supported by grants.

- Start small and work your way up; you need publications, preliminary data and national/international collaborations to be competitive with large grants. There are lots of small grants available in dentistry, especially for early career researchers, and some focused on primary care; eg Oral and Dental Research Trust (ODRT; <https://www.odrt.org.uk/>), Royal College Surgeons of England (<https://www.rcseng.ac.uk/standards-and-research/research/fellowships-awards-grants/>)
- Large grants are few and far between for oral and dental research, but it may be worth monitoring funding calls for larger charities such as the NIHR, Medical Research Council (MRC; <https://mrc.ukri.org/>), Biotechnology and Biological Sciences Research Council (BBSRC; <https://bbsrc.ukri.org/>), British Heart Foundation (BHF; <https://www.bhf.org.uk/>), Cancer Research UK (CRUK; <https://www.cancerresearchuk.org/>) and consider how your research interests might fit within the research criteria.

8. Have a five- and ten-year career strategy

- Write down what you want to be doing in five or ten years; if it looks like you want a mixed portfolio career involving research, then make a map of how to get there
- Be patient; research does not give immediate rewards with results or immediate financial rewards; most of the benefits to you and patients are long term
- Be proactive, knock on doors and do not expect people to do it for you. ■

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