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King, Rachel; Williamson, Stefanie; Nelson, Pauline Anne; Finn, Rachael; Hodgson, Damian; Mitchell, Caroline; Barratt, Julian; Horspool, Michelle; Aslam, Aaishah; Wood, Emily

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Title: Realist Evaluation of Multi-professional Advanced Practice in Primary Care (REMAP): Study Protocol

Authors

Rachel King, University of Sheffield https://orcid.org/0000-0003-4012-0202

Stefanie Williamson (corresponding author), The University of Sheffield Management School stefanie.williamson@sheffield.ac.uk https://orcid.org/0000-0002-6796-2787

Pauline Anne Nelson, The University of Sheffield Management School https://orcid.org/0000-0003-4162-4736

Rachael Finn, The University of Sheffield Management School https://orcid.org/0000-0002-3857-2384

Damian Hodgson, The University of Sheffield Management School https://orcid.org/0000-0002-9292-5945

Caroline Mitchell, Keele University https://orcid.org/0000-0002-4790-0095

Julian Barratt, University of Sheffield https://orcid.org/0000-0002-1265-7785

Michelle Horspool, Sheffield Health Partnership University NHS FT https://orcid.org/0000-0002-3069-6091

Aaishah Aslam, University of Sheffield https://orcid.org/0009-0005-0396-5566

Emily Wood, Sheffield Centre for Health and Related Research, University of Sheffield https://orcid.org/0000-0002-1910-6230

Abstract

Background

The introduction of advanced practitioners (APs) is one approach to addressing health and care workforce shortages, with around 6,000 APs working in primary care in England. There is variation in implementation, regulation, and scope of the role, and limited knowledge on implications of their implementation on workforce organisation, staff and patients. There is a pressing need for research to understand what works in advanced practice implementation, for whom and in which contexts.

Aim

To understand the contexts and mechanisms that influence key outcomes in the implementation of multiprofessional advanced practice in primary care in England and develop recommendations to support workforce development.

Design & setting

A realist evaluation using mixed methods across four work packages in primary care in England, incorporating research with advanced practice workforce leads, APs, key primary care staff (clinical and management), and patients and carers.

Method

The following approaches will be taken: i) semi-structured interviews with advanced practice workforce leads in England to inform the development of an initial programme theory (IPT) (n=15); ii) online survey of APs in England to refine IPT (n>300); iii) case studies in five GP practices in England, interviewing staff members (n=10), conducting interviews or focus groups with patients (n=5) and gathering documentary data (to test and modify the IPT); iv) stakeholder workshops to share findings and develop policy and practice recommendations.

Conclusion

Findings will be used to inform recommendations for the implementation of advanced practice in primary care, to support workforce development, enhance patient experience and improve health outcomes.

Keywords

Advanced practice, primary health care, workforce, realist evaluation, general practice, mixed methods

How this fits in

Advanced practitioners (APs) are one strategy to address the primary care workforce crisis. They come from a range of professional backgrounds (e.g. nurses, midwives, allied health professionals and pharmacists).

Variations in how advanced practice roles are implemented and supported has led to role ambiguity amongst colleagues and patients, and variations in job satisfaction.

This study will use realist methods across several work packages to understand the mechanisms that influence key outcomes, in a range of contexts.

Findings will inform a framework for best practice for supporting advanced practice in primary care, to improve role clarity and retention, alongside guidance to improve understanding of advanced practice roles using inclusive designs for patients and carers.

Introduction

APs have been introduced as one strategy to address the workforce crisis(1), where the decrease in general practitioners (GPs) adds significant pressure on primary

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care in the UK and globally(2-5). Approximately 6000 APs work in primary care in England(6); most from nursing but almost one-third from other health professions(7) including pharmacy and allied health professions (AHPs). APs undergo training (at post-registration master's level or equivalent) to assess, diagnose and treat patients(7) and practice with a high degree of autonomy and responsibility for complex decision-making(8).

AP roles are not collectively regulated in the UK and the multi-disciplinary nature of advanced practice brings variation in the planning, implementation, regulation, and scope of the role. APs in primary care have been evaluated positively(9,10), are accepted by colleagues, and make important contributions to patient care(9,11-13). However, they face a number of challenges including; role ambiguity; variations in job satisfaction; variations in pay, employment contract and job security; barriers to secondary care referral processes; isolation and lack of belonging; inadequate resources for training, supervision, continuing professional development (CPD), and research-informed practice(9,11,12,14-16) ; and a lack of routes for career progression(17). These challenges generate problems in recruitment and retention of APs(18). Further, this variation and ambiguity brings confusion about role expectations for employers, colleagues and patients. Intra-professional and inter-professional tensions resulting from boundary blurring have also made transition from nurse/pharmacist/AHP to AP in primary care sometimes difficult to achieve(18,19).

Prior research on advanced practice has predominantly focused on nurses(18). There is a need to explore the experiences of APs from other disciplines(20), as well as the views of managers, policymakers, patients, and other health professionals(21); and the impact of advanced practice on inter-professional team functioning, working conditions and workload(9).

The proposed study will use realist methods(22) to understand the contexts (including different models) of primary care advanced practice and the mechanisms that influence key outcomes (such as workforce retention and patient experience). We will develop recommendations to inform strategies to enhance primary care workforce development and contribute to delivering better patient outcomes.

Method

A realist evaluation(22,23) allows researchers to specify what works for whom in what context by understanding the mechanisms through which outcomes are enacted, and the conditions which allow those mechanisms to be triggered. This evaluation will include four work packages (WPs) to develop and refine programme theories(24). WPs will be undertaken sequentially so that results from earlier WPs can inform later WPs. See Figure 1.

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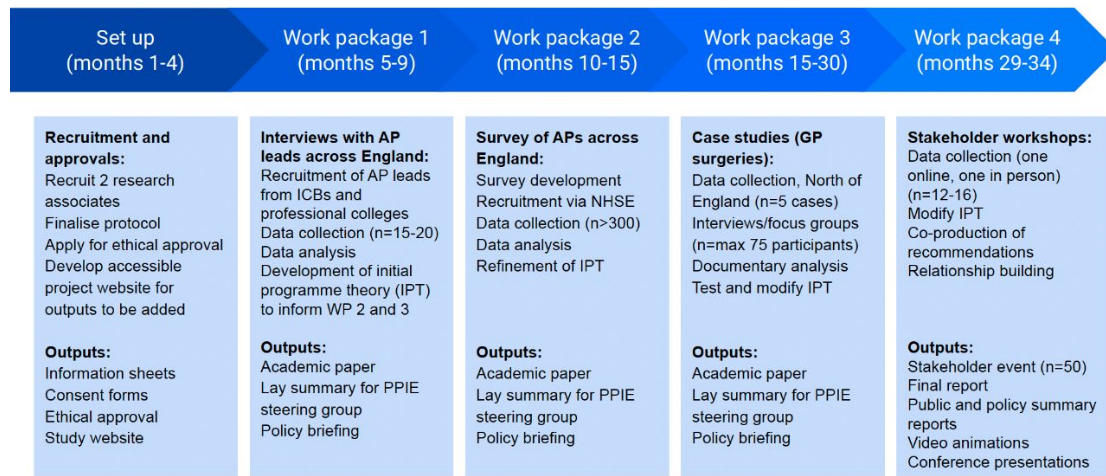
Figure 1: Flowchart showing project timeline



WP1: interviews with regional and national AP workforce leads

Aim, Design and Setting

WP1 aims to identify specific contexts that impact on advanced practice outcomes, and explore how these contexts shape specific mechanisms(25), informing the initial programme theory (IPT). The findings will also enable us to inform the survey design and identify issues to explore in the case studies site selection.

WP1 will utilise semi-structured interviews with regional and national AP workforce leads using a topic guide informed by the literature, and stakeholder engagement, and framed by the Consolidated Framework for Implementation Research (CFIR). It will elicit contexts and mechanisms to develop context-mechanism-outcome configurations (CMOCs). The topic guide will explore decision-making about AP training and recruitment, any prioritisation of the professional backgrounds of APs, and the impact of APs on workload planning, appointment accessibility, the interface between primary and secondary care, and patient experience. Interviews are expected to last up to one hour and will be audio-recorded, transcribed verbatim using a professional transcriber, and anonymised.

Data collection will be undertaken remotely, online or by telephone. Therefore, researchers will be based in their usual workplaces and participants may also be in their place of work.

Sampling and recruitment

We will sample advanced practice workforce leads from Integrated Care Boards (ICBs), training hubs (THs), and professional bodies (such as Royal Colleges) across England, ensuring representation of the different AP professions in English

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primary care (n=15-20). We will recruit through our existing networks, including our ICB stakeholders.

Analysis

An iterative approach will be taken to use the data gathered within WP1 to develop the context-mechanism-action configurations (CMOCs) to build an initial programme theory (IPT) for later WPs to test and refine. Data will be analysed thematically(26) using realist principles as a theoretical guide(22,27). Data will be coded using NVivo plus 14, and main themes generated jointly across the research team. These will be used to develop the IPT using four steps: (a) category identification, (b) elaboration of CMOCs, (c) demi-regularities identification, and (d) generative mechanism refinement.

WP2: survey of advanced practitioners

Aim, Design and Setting

The aim of WP2 is to refine the IPT developed in WP1(24). WP2 will involve a survey of APs which responds to the findings from WP1 but also allows space for potential new CMOCs. The survey will be administered remotely using Qualtrics, via email. Researchers will consequently be in their usual place of work, whilst participants could respond from anywhere across England with suitable internet access.

Sampling and recruitment

Participants will self-identify as an AP in line with the definition provided by NHS England (2025): “Advanced practice is delivered by accomplished registered health and care professionals. It is a level of practice characterised by a high degree of autonomy and designated responsibility for complex decision making. This is underpinned by a post-registration master’s level award or equivalent undertaken by an experienced practitioner that encompasses all four pillars of clinical practice, leadership and management, education, and research.” (8, pg. 5). We hope to achieve a response of over 300 APs from primary care across England. Cascading of study information for recruitment will be supported by the NHS England Centre for Advancing Practice and its network of regional faculties for advancing practice, ICBs, professional forums, and practice networks. An email with a link to the survey will be sent to the mailing lists, with reminders at three and six weeks. Participants will be offered a CPD certificate for taking part in research and the opportunity to enter a prize draw or give the prize to charity.

Analysis

Survey data analysis will be predominantly descriptive to understand APs’ professional backgrounds, professional identities, levels and scope of practice,

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experiences of support, and career intentions. The survey will also be used to test and modify the IPT. Data will be analysed with SPSS (v.29). Where possible, comparative statistics will be used to look at the differences between those of differing professional backgrounds. Analysis of validated scales will be undertaken in accordance with published guidance.

WP3: case studies in GP surgeries

Aim, Design and Setting

WP3 aims to further refine the IPT. It will consist of case studies of five GP surgeries in the North of England to allow for in-depth exploration of complex issues(28)(28). Each site will be visited by a member of the research team to provide information about the study and invite eligible participants. The case studies will include interviews with key staff members (n=10) such as APs from a range of professional backgrounds, GPs, practice managers, practice nurses, and interviews/focus groups with patients and carers (n=5). Face-to-face and online interview options will be given for convenience, accessibility and privacy.

Sampling

We will use a sampling frame developed in WP1 and WP2 to purposively select cases, ensuring variation across Integrated Care System (ICS) regions, rural and urban locations, deprivation measures, team configurations and the inclusion of under-served groups. Sampling will be based on data from NIHR delivery network databases. We will also purposively sample within the cases, aiming for demographic variation of participants, adopting strategies to promote inclusive recruitment(29). Staff will be offered backfill funding to compensate for their time and patients and carers will be offered a voucher for taking part.

Analysis

Analysis will be iterative and will follow procedures similar to that described by Gilmore et al.(30). Cases will initially be analysed separately before a final cross-case synthesis stage. Case studies will contribute to the final CMOCs and will be analysed using NVivo plus 14. The analysis process will include: preparing the data, identifying individual CMOCs, refining CMOCs in each case study, synthesising the analysis across case studies and creating a final modified programme theory of advanced practice in primary care.

WP4: stakeholder workshops and dissemination event

In WP4 we will present the CMOCs used to inform the emerging programme theory to our stakeholders through one online and one in-person workshop. The aim is to share our findings and develop recommendations for policy and practice. Workshop

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feedback will be discussed within the research team and used to sense-check the programme theory and develop recommendations for practice and policy.

Participant inclusion

Table 1 summarises the inclusion and exclusion parameters for participation in each WP.

Table 1: Participant Inclusion and Exclusion Criteria

Work Package	Inclusion Criteria	Exclusion Criteria
1	Working as a workforce lead or a similar role which includes strategic responsibility for advanced practice in primary care in England.	Not working as a workforce lead for advanced practice in primary care in England.
2	Working as an AP in primary care in England. Respondents will self-identify as APs in line with the multi-professional AP framework from NHS England (2025) (3), which will be included in pre-survey information. This may include some individuals who do not have a master's degree in advanced clinical practice, but who meet the NHS England (NHSE) training criteria for AP competency (they may or may not have done this formally through the portfolio).	Not working as an AP in primary care in England. The study will not include Physicians Associates/Assistants as they work in associate practice roles and under supervision(31).
3	Working in a GP surgery, being a registered patient or carer of a patient at a GP surgery in one of the case study sites.	Not working in a GP surgery or not being a registered patient (or carer of a registered patient) of a GP surgery at one of the case study sites.
4	A key stakeholder in primary care advanced practice (i.e. AP, other clinician, employer, patient, policymaker).	Not a key stakeholder in primary care advanced practice (i.e. AP, other clinician, employer, patient, policymaker)

Ethical considerations and data governance

For each WP, participants will receive an information sheet and have the opportunity to ask questions about the research before participating. Written informed consent will be taken from each participant using Qualtrics prior to participation in WP1, WP2 and WP3. As WP4 is stakeholder engagement, participants will not be required to sign a consent form. Participants will be made aware of their right to cease participation and withdraw their data. All data will be processed in line with General

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Data Protection Regulation requirements and adhering to a comprehensive data management plan, ensuring confidentiality and secure storage.

Study oversight groups

Three study management groups were established during the project's initial stages:

1) Steering group to meet bi-annually to provide overall supervision for the project on behalf of the sponsor and the funder and ensure it meets rigorous standards.
2) Advisory group to meet annually to provide context/guidance to the project team on behalf of key national stakeholders on issues such as policy developments and support targeted dissemination.
3) Patient and Public Involvement and Engagement (PPIE) group to meet every four months to inform project design, provide feedback on data analysis and the production of materials for dissemination.

Discussion

This research will address a gap in current evidence on the implementation of multi-professional advanced practice in primary care. It will use a realist evaluation approach and mixed methods across four WPs to understand the mechanisms through which advanced practice can be applied effectively in different contexts to support workforce development and patient care. It will produce recommendations to enhance workforce development, patient experience and outcomes. The strength of a realist approach is that it allows the research to go beyond a focus on 'what works' to understand how things work under particular conditions. Its multi-stage and mixed methods nature also allow for iterative development and refinement of programme theories, increasing the rigour of the research and robustness of associated recommendations.

Additional information

- Funding: This study is funded by the NIHR Health and Social Care Delivery Research (169270). The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

- Ethical approval: WP1 and WP2 ethical approval has been granted by the University of Sheffield research ethics committee (REC) (ref. 071021) and the Health Research Authority (HRA) (ref: 25/HRA/4779). We will seek approval for WP3 from the NHS REC at a later stage.

- Competing interests - none

- Acknowledgements- We are very grateful for feedback and guidance from our steering committee, advisory board and PPIE group.

References

1. Drennan VM, Collins L, Allan H et al. Are advanced clinical practice roles in England's National Health Service a remedy for workforce problems? A qualitative study of senior staff perspectives. J Health Serv Res Policy. 2022;27(2):96–105.

2. World Health Organization. Health and care workforce in Europe: time to act [Internet]. WHO Regional Office for Europe; 2022 [cited 2025 Oct 23]. Available from: https://www.who.int/europe/publications/i/item/9789289058339

3. Health and Social Care Committee. Workforce: recruitment, training and retention in health and social care Third Report of Session 2022-23 Report, together with formal minutes relating to the report [Internet]. London: House of Commons; 2022 Jul [cited 2022 Jul 29]. Available from: www.parliament.uk/

4. NHS. The NHS Long Term Plan [Internet]. London; 2019 [cited 2020 Mar 13]. Available from: www.longtermplan.nhs.uk

5.Darzi. Independent investigation of the NHS in England [Internet]. 2024 [cited 2024 Dec 2]. Available from: https://www.gov.uk/government/publications/independent-investigation-of-the-nhs-in-england

6. NHS Digital. Primary Care Workforce Quarterly Update, 31 December 2023, Experimental Statistics [Internet]. [cited 2025 Oct 21]. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/primary-care-workforce-quarterly-update/31-december-2023

7. Billy Palmer, Sophie Julian, Louella Vaughan. Independent report on the regulation of advanced practice in nursing and midwifery 2023 [Internet]. Nuffield Trust; 2023. Available from: https://www.nuffieldtrust.org.uk/research/independent-report-on-the-regulation-of-advanced-practice-in-nursing-and-midwifery

8. NHS England. NHS England. Multi-professional framework for advanced practice in England [Internet]. 2025 [cited 2025 Oct 23]. Available from: https://advanced-practice.hee.nhs.uk/

9. Kilpatrick K, Savard I, Audet LA et al. A global perspective of advanced practice nursing research: A review of systematic reviews. Canzan F, editor. PLOS ONE. 2024;19(7):e0305008.

10. Collins D. Assessing the effectiveness of advanced nurse practitioners undertaking home visits in an out of hours urgent primary care service in England. J Nurs Manag. 2019;27(2):450–8.

11. Karimi-Shahanjarini A, Shakibazadeh E, Rashidian A et al. Barriers and facilitators to the implementation of doctor-nurse substitution strategies in primary care: a qualitative evidence synthesis. Cochrane Effective Practice and Organisation of Care Group, editor. Cochrane Database Syst Rev [Internet]. 2019 [cited 2025 Oct 23];2019(4). Available from: http://doi.wiley.com/10.1002/14651858.CD010412.pub2

12. Evans C, Pearce R, Greaves S, Blake H. Advanced Clinical Practitioners in Primary Care in the UK: A Qualitative Study of Workforce Transformation. Int J Environ Res Public Health. 2020;17(12):4500.

13. Strachan H, Hoskins G, Wells M, Maxwell M. A realist evaluation case study of the implementation of advanced nurse practitioner roles in primary care in Scotland. J Adv Nurs. 2022;78(9):2916–32.

14. Timmons S, Mann C, Evans C et al. The Advanced Clinical Practitioner (ACP) in UK healthcare: Dichotomies in a new ‘multi-professional’ profession. SSM - Qual Res Health. 2023;3:100211.

15. Wood E, King R, Robertson S et al. Sources of satisfaction, dissatisfaction and well-being for UK advanced practice nurses: A qualitative study. J Nurs Manag. 2021;29(5):1073–80.

16. Eaton G, Happs I, Tanner R. Designing and implementing an educational framework for advanced paramedic practitioners rotating into primary care in North Wales. Educ Prim Care. 2021;32(5):289–95.

17. Wood E, King R, Robertson S et al. Advanced practice nurses’ experiences and well-being: Baseline demographics from a cohort study. J Nurs Manag. 2020;28(4):959–67.

18. Torrens C, Campbell P, Hoskins G et al. Barriers and facilitators to the implementation of the advanced nurse practitioner role in primary care settings: A scoping review. Int J Nurs Stud. 2020;104:103443.

19. Anderson H, Birks Y, Adamson J. Exploring the relationship between nursing identity and advanced nursing practice: An ethnographic study. J Clin Nurs. 2020;29(7–8):1195–208.

20. Nelson PA, Bradley F, Martindale AM et al. Skill-mix change in general practice: a qualitative comparison of three ‘new’ non-medical roles in English primary care. Br J Gen Pract. 2019;69(684):e489–98.

21. Ansell D, Crispo JAG, Simard B, Bjerre LM. Interventions to reduce wait times for primary care appointments: a systematic review. BMC Health Serv Res. 2017;17(1):295.

22. Pawson R, Tilley N. An introduction to scientific realist evaluation. In: Evaluation for the 21st century: A handbook. 1997. p. 405–28.

23. Pawson R. The Science of Evaluation: A Realist Manifesto. London: Sage; 2013.

24. Wong G, Westhorp G, Manzano A et al. RAMESES II reporting standards for realist evaluations. BMC Med. 2016;14(1):96.

25. Huxley CE. Paramedics in advanced practice: role, requirements and impact. Int J Adv Pract. 2024;2(1):32–5.

26. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101.

27. Putri AF, Chandler C, Tocher J. Realist Approach to Qualitative Data Analysis. Nurs Res. 2023;72(6):481-488.

28. Crowe S, Cresswell K, Robertson A et al. The case study approach. BMC Med Res Methodol. 2011;11:100.

29. NIHR. Making research inclusive [Internet]. 2024. Available from: https://www.nihr.ac.uk/about-us/who-we-are/research-inclusion/making-research-inclusive

30. Gilmore B, McAuliffe E, Power J, Vallières F. Data Analysis and Synthesis Within a Realist Evaluation: Toward More Transparent Methodological Approaches. Int J Qual Methods [Internet]. 2019;18. Available from: https://journals.sagepub.com/doi/full/10.1177/1609406919859754

31. General Medical Council. Effective clinical governance to support revalidation [Internet]. 2024 [cited 2025 Oct 24]. Available from: https://www.gmc-uk.org/registration-and-licensing/employers-and-other-organisations/effective-clinical-governance-to-support-revalidation

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