RAND EUROPE

# Enabling NHS staff to contribute to research

Reflecting on current practice and informing future opportunities

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# Preface

RAND Europe was commissioned by The Healthcare Improvement Studies (THIS) Institute at the University of Cambridge to conduct a rapid review of the evidence base on NHS staff involvement with research. The report considers what motivates NHS staff to contribute to research, how their involvement can be enabled and rewarded, what challenges will need to be addressed and what we know about the impact of NHS staff involvement. The report should be of relevance to THIS Institute and to other organisations aiming to develop effective strategies for health workforce involvement with research.

A diverse set of funding bodies and professional organisations support clinical academic career pathways and research fellowships for healthcare professionals, and contribute to research capacity building through medical education. These organisations make an important contribution to research capacity in the health system in the United Kingdom. However, clinical academic models of engagement are not the focus of this report. Rather, the report focuses on understanding how the capacity of a much wider NHS workforce to contribute to research can be mobilised effectively – outside of the boundaries of clinical academic models or fellowship arrangements.

The report is structured as follows:

- Section 1 provides background and context to the research and outlines the research aims, study design and methods.
- Section 2 profiles the literature reviewed for this research.
- Section 3 considers what motivates NHS staff to contribute to research.
- Section 4 discusses how NHS staff contribute, considering a diverse range of approaches and types of involvement.
- Section 5 considers how NHS staff contributions can best be enabled.
- Section 6 overviews key challenges and barriers.
- Section 7 reflects on the impacts of NHS staff involvement with research.
- Section 8 draws on the learning to set out some action areas for THIS Institute and other organisations to consider as they develop strategies for engaging with the NHS workforce.
- Appendices: Appendix A provides case-based examples of NHS staff involvement in research, illustrating key insights from our review in practice. Appendix B provides further detail on the study methodology.

RAND Europe is a not-for-profit policy research organisation which aims to improve policy

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# Summary

## This report aims to contribute to the evidence base on how to effectively engage NHS staff in research

RAND Europe was commissioned by The Healthcare Improvement Studies (THIS) Institute to conduct a rapid review of the evidence base on engaging NHS staff in healthcare research. The review aims to help inform THIS Institute's efforts to establish and implement an effective strategy for engaging staff across the NHS with its research activities. The report will also be useful for other organisations and initiatives seeking to engage NHS staff in research.

The report is focused on a diverse NHS workforce that is directly or indirectly involved with care delivery, including individuals in clinical, managerial, administrative and support roles. The terms NHS staff, healthcare professionals and NHS workforce are used interchangeably throughout this report.

Staff across the NHS have important expertise to contribute to healthcare research. However, they also face competing demands on their time, not least delivering patient care. Any efforts to mobilise wide-scale NHS workforce engagement with improvement research need to understand what motivates staff to engage with research; to consider staff constraints; and to establish practical and rewarding mechanisms for harnessing their expertise, commitment to high-quality and safe patient care, and interest in evidence-based practice.

This review is primarily concerned with *active* NHS staff engagement in healthcare research, for example in helping shape research questions or priorities, rather than considering NHS staff as study participants. Further, while many organisations make an important contribution to research capacity in the health system through clinical academic posts and research fellowships, this review outlines how the capacity of a *wider* NHS workforce can be mobilised effectively and through innovative channels.

Based on a rapid evidence assessment and interviews with experts, this report examines why and how NHS staff contribute to research, associated engagement challenges and potential enabling mechanisms. The report also summarises the evidence on the impact of NHS staff engagement on research processes and outcomes. Based on these insights, we provide a series of recommendations for THIS Institute and other organisations to consider, when developing strategies for engaging healthcare professionals in research.

Throughout our report, we use the words involvement and engagement interchangeably, reflecting the general practice in the literature. However, we recognise the need for the terminology related to NHS staff contributions

to research to be clarified in the wider knowledge base.

## Why do NHS staff engage with research?

NHS staff choose to engage with research for a variety of reasons, including: (i) personal interest in a research or evaluation topic; (ii) cultural expectations in some clinical disciplines that involvement in research is part of the job; (iii) a belief that research and evidence can improve the quality and safety of healthcare, patient experience and patient outcomes; (iv) a positive prior experience with research; and (v) prospects for career development, as well as reputational or financial benefits.

## How do NHS staff engage with research?

NHS staff can contribute to research in a variety of ways. These include: (i) *consultation-based* involvement, where health professionals respond to requests for their views or for advice on various research issues; (ii) *directly working with research teams*, for example in advisory board roles or as members of clinical research networks; and (iii) as *members of a research team*, for example as co-researchers or members of project steering committees.

## What are the challenges to NHS staff involvement in research and how can they be addressed so that contributions are effectively enabled and rewarded?

While there are a range of challenges to effective NHS staff engagement with research, there is an evolving evidence base on enabling mechanisms and rewards that could be pursued. The key enablers and

challenges discussed in the literature and emphasised by the experts consulted for this research are overviewed in Table 1. The rewards for engagement that matter most to NHS staff include career progression and professional development opportunities related to learning new skills, recognition in professional communities and reputational awards, and seeing the impact of their research contributions on clinical practice.

## What is the impact of engaging NHS staff in healthcare research?

Evidence on the impact of engaging NHS staff in research is scarce, with more focus on the potential benefits of engagement rather than systematically evaluating impact. However, there is widespread acknowledgement of a diverse range of potential benefits. One such benefit is *impact on research studies*. This includes impacts on identifying research priorities, on the quality and relevance of study designs for the health service and patients, on enabling participant recruitment, on helping implement studies in healthcare provider contexts, and on influential communications and dissemination of research findings. Another benefit is *impact on the wider research system*, for example through attracting funding for research and increasing the willingness of colleagues to engage with research. There is also potential for healthcare professionals engaged with research to *influence clinical practice*, for example through spreading knowledge about evidence-based practices and promoting the uptake of evidence. Finally, engagement with research can also have a *personal impact* on individuals, for example through the development of new skills, professional development and career progression.

**Table 1: Challenges and enablers of effective NHS staff involvement with research**

| Driver of effective involvement | Challenges | Enablers |
| --- | --- | --- |
| Governance, management and infrastructure | • Lack of sufficient funding for research and/or a lack of awareness about how to access it.<br>• A weak or opaque governance and management infrastructure (e.g. an unclear, inadequate or unwieldy bureaucracy for research and development (R&D) approvals can inhibit research applications).<br>• A failure to recognise research contributions in job plans, appraisal systems and career pathways.<br>• Lack of clear leadership and definition of roles for NHS staff within research projects.<br>• Absence of information-sharing about research opportunities. | • Formal roles such as the appointment of research champions in provider organisations.<br>• Clear guidelines and procedures for developing and implementing research to assist NHS staff.<br>• Well-designed time-management systems that recognise research activities of NHS staff.<br>• Financial recognition through pay progression.<br>• Mechanisms for awareness-raising about opportunities for involvement in research and how NHS staff can engage.<br>• Accessible funding for research.<br>• An enabling research infrastructure (equipment, facilities, information infrastructure).<br>• Organisational practices which free up time and headspace to engage with research. |
| Individual and organisational capacity to be involved in research | • Lack of knowledge and skills needed to do research.<br>• Lack of access to relevant training.<br>• Lack of dedicated time to be involved in research. | • Integration of research within clinical practice through the promotion of evidence-based practice and engagement with research in clinical decision making.<br>• Access to training for NHS staff to develop their research skills and confidence.<br>• Mentoring and informal teaching.<br>• Collaboration with other organisations and individuals with an active interest in research. |
| Culture, attitudes, values and behaviours | • Insufficient support by leadership and associated lack of strategic planning for R&D at organisational level.<br>• Divergent views among NHS stakeholders about what topics are important to research.<br>• A perception that research is a specialist activity and outside the domains of some health professions.<br>• A perceived inability to influence practice through research.<br>• A perception among health professionals that it can be difficult to work with research teams in academia.<br>• Concern that time demands on NHS staff to deliver research tasks can be underestimated by research teams. | • Organisational leadership and culture which values and promotes research activity.<br>• Recognition and awards for involvement in research.<br>• Effective mechanisms for the dissemination of research findings.<br>• A compelling narrative about the research.<br>• A culture of feedback on the impact of staff contributions to research and wider impacts.<br>• Exposure to research training in early career stages. |

# Recommendations

We offer the following recommendations to inform strategies for engaging NHS staff in research:

1. **Identify the most meaningful types of contribution on a case-by-case basis, depending on what best fits the needs of a project and organisation.** Involving the NHS workforce with research effectively does not mean that they need to be involved at every stage or in every aspect of the research process.

2. **Ensure at the outset that research roles and responsibilities are clear and well defined,** and that there is a shared understanding of the purpose, scope and remit of healthcare staff engagement, and of the timelines associated with engagement and support systems available.

3. **Consider the balance between targeting specific groups and opening up engagement more widely.** Some research opportunities will benefit from the involvement of diverse types of staff, while others will require input from a specific community. Organisations should make explicit why and how different professional groups can add value.

4. **Consider accessing existing data sources that shed light on issues that matter to the NHS workforce** in order to complement internal approaches to identifying and specifying important research questions and to establishing study designs.

5. **Frame opportunities for involvement in a way that aligns with what motivates NHS staff to engage with health research and communicate the relevance of the opportunity to their everyday work and job roles.** This includes communicating how involvement opportunities relate to both personal and professional interests, and making clear how the research links to the *potential* benefits for clinical practice and patients.

6. **Pay attention to the language used in communicating with healthcare staff and avoid unnecessary jargon.** A clear and compelling narrative is important for communicating why an individual should get involved with research.

7. **Consider how best to use established and trusted professional networks, in combination with online or other types of direct awareness-raising and recruitment,** to help share information about involvement opportunities and attract NHS staff to take part.

8. **Make engagement opportunities user friendly.** Collaboration and contributions have to fit into the lives of busy NHS staff and must be relevant and easy to execute.

9. **Establish and nurture relationships with leadership in healthcare provider organisations to ensure an enabling culture for research, including outside of leading research-active healthcare provider settings.** Engage with executive leadership, middle management and frontline staff on the basis that engagement at all levels is needed to achieve organisational buy-in, and support organisational environments that enable staff to have time and headspace to engage with research.

10. **Ensure that opportunities to recognise and reward involvement in research are created and communicated to healthcare professionals.** This includes making clear how contributions will be acknowledged and how feedback on research progress and impact will be communicated, and working with professional bodies to

consider benefits and rewards in terms of the career development of NHS staff.

11. **Organisations should reflect on how they can contribute to research capacity building in the NHS through information-brokering roles.** These extend beyond sharing information about research opportunities or study results. An example would be bringing together and sharing information on training and mentorship schemes in the health research system.

12. **At the outset of a project, establish evaluation plans for assessing and learning about the process, outcomes and impacts of NHS staff engagement with research.** Commit to sharing and disseminating learning from such evaluations. The evaluation plans for each project should make clear whether the focus of the evaluation is on the quality of the staff engagement *process* itself and/or on the *outcomes and impacts* of the engagement.

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# Acronyms and abbreviations

| | |
|---|---|
| AHSN | Academic Health Science Network |
| CLAHRC | Collaborations for Leadership in Applied Health Research and Care |
| CPD | Continuing Professional Development |
| DQI | Dynamic Quality Improvement |
| HRT | Hormone Replacement Therapy |
| JLA | James Lind Alliance |
| NICE | National Institute of Health and Care Excellence |
| NIH | National Institutes of Health |
| NIHR | National Institute for Health Research |
| PCRN | Primary Care Research Network |
| PSP | Priority-Setting Partnership |
| R&D | Research and Development |
| REA | Rapid Evidence Assessment |
| SSD | Social Service Department |
| THIS Institute | The Healthcare Improvement Studies Institute |

# Acknowledgements

# 1 Background and context: enabling the NHS workforce to contribute to quality improvement through research

## 1.1. There is a need for better evidence on how to engage the NHS workforce with research

The Healthcare Improvement Studies (THIS) Institute is an ambitious new initiative which aims to strengthen the evidence base on how to improve the quality and safety of healthcare, and in doing so to create a large-scale, unique scientific asset for the health and care system. The Institute is committed to working closely with the healthcare workforce, patients and the wider public to ensure an evidence base on improvement that is relevant to those delivering and receiving care, and to ensure actionable research outputs.

In this report, we use the term healthcare workforce in an NHS context, and focus on NHS staff in clinical, managerial, administrative and support roles as those directly or indirectly involved in care delivery. In the contents that follow, the terms NHS staff, healthcare professionals and NHS workforce are used interchangeably and cover these diverse types of staff.

Healthcare staff are likely to have unique expertise which can inform different areas of research. These include, but are not confined to, research design (e.g. research questions, study designs and protocols, organisational sites to engage), research conduct (e.g. actively engaging in data collection and analysis) and priority setting. However, they also face competing demands on their time, not least delivering patient care. This means that any efforts to mobilise wide-scale healthcare workforce engagement with improvement research need to be framed around an understanding of what motivates staff to engage with research, consider the constraints staff are under, and establish practical and rewarding mechanisms for harnessing their expertise, commitment to high-quality and safe patient care, and interest in evidence-based practice.

THIS Institute seeks to enable a large-scale, connected community of healthcare staff to be involved in research to improve healthcare. This includes going beyond clinical academic and fellowship models of health professional involvement in health research, and pursuing innovative channels that allow for a broad array of individuals across specialties and service areas to contribute to the Institute's aims. These include a citizen science platform as an enabling mechanism. However, the evidence base on how to best engage health professionals in research (outside of clinical academic and fellowship approaches) is fragmented and limited. This means there is a need for reflection on what works and why, and how to inform future efforts in this space.

## 1.2. Research aims, design and methods

### 1.2.1. Research aims

This study examines the following questions:

- What motivates NHS staff to engage with research (Section 3)?
- What types of approaches and methods of engaging NHS staff with research are used in research practice (with a particular interest in research design, conduct and priority setting) (Section 4)?
- What are the associated enablers (Section 5)?
- What are the challenges to engagement (Section 6)?
- What impacts (intended or unintended, desired or undesired) can NHS staff involvement have on the research process and outcomes, and if the evidence base exists how can this be evaluated (Section 7)?
- Based on the above, what considerations should THIS Institute and other related organisations or initiatives bear in mind when developing a research engagement strategy for NHS staff (Section 8)?

It is important to highlight that this report focuses on active staff engagement in helping inform or shape study design, in driving research implementation (e.g. gathering or analysing data) and in informing research priority-setting processes. The research is not focused on more passive models of engagement where healthcare staff are study participants (e.g. interviewed or surveyed as part of research on a health topic). An exception to this is priority setting, where the boundaries between actively shaping the priority-setting process (i.e. its design and implementation) and participating in that process can be blurred. This is because most priority-setting exercises are based on

consultative methods such as surveys, focus groups and consensus building to identify and specify priorities and articulate protocols for consensus building rounds. In the case of priority setting we considered any type of engagement of NHS health professional as eligible for inclusion in our study.

It is also important to note that we recognise that there are many funding bodies that support clinical academic career pathways and research fellowships for healthcare professionals, as well as contributing to research capacity building throughout medical education pathways. Some examples include the National Institute for Health Research, Wellcome Trust, Medical Research Council and various programmes that involve Health Education England and professional associations. These organisations make an important contribution to research capacity in the health system. However, clinical academic models of engagement are not the focus of this report. Rather, the report seeks to understand how the capacity of the wider NHS workforce to contribute to research can be mobilised effectively – outside of the boundaries of clinical academic models.

### 1.2.2. Study design and methods

In order to answer the questions set out above on NHS staff engagement in research, we conducted a rapid evidence assessment (REA) of the literature. This was complemented by interviews with key informants with expertise in the field. The REA process consisted of searches of academic and grey literature, the screening of the titles and abstracts of identified articles against inclusion and exclusion criteria, and full-text review and analysis of articles that met the specified criteria.

Due to the large number of articles identified as potentially relevant during the initial title and abstract screening phase, an additional date restriction was added, limiting inclusion to

articles published from 2000 onwards. On this basis we included 35 articles with a primary focus on NHS staff involvement with research. In addition, for articles that described NHS staff involvement with research, but where this was not the primary focus (94 articles), a subset (12 papers) was selected for inclusion based on relevance to THIS Institute's particular areas of interest and activity (this excluded, for example, papers focused on research fellowship-type approaches). This helped ensure a clear focus for the review and coverage of diverse types of research papers. In total, 47 articles were included in the review.

Table 2 summarises the inclusion and exclusion criteria used in the screening of titles and abstracts. For more information on the methods used in this research, please see Appendix B.

**Table 2: Summary of inclusion and exclusion criteria**

| Title and abstract screening | Inclusion | Exclusion |
|---|---|---|
| Topic | Articles which:<br>• Focus on methods or approaches to the engagement of NHS staff in the prioritisation, design or conduct of research studies or evaluations of healthcare or improvement interventions;<br>• Focus on the challenges to and enablers of NHS staff engagement;<br>• Provide insights on the impact of NHS staff engagement, including insights on advantages and disadvantages;<br>• Provide insights on the evaluation NHS staff engagement. | Articles which:<br>• Focus on academic clinical leadership models or research fellowship models and associated schemes;<br>• Focus on the involvement of NHS staff as participants in research, but where they are not actively involved in its prioritisation, design or conduct (e.g. as interviewees or observed through non-participant observation);<br>• Focus on the involvement of NHS staff solely in delivery of an intervention to be evaluated, but where they are not involved in its evaluation;<br>• Focus on NHS staff involvement in service or intervention development without an evaluative component;<br>• Focus on NHS staff involvement in the prioritisation of service changes/developments (as distinct from research prioritisation). |
| Language | English | Any language other than English |
| Country setting | UK | None |
| Document type | • Any type of publication, (including commentaries, editorials or opinion pieces) where the assertions are based on empirical evidence or practical experience. | • Commentaries, editorials or opinion pieces without direct reference to empirical evidence or practical experience.<br>• Conference abstracts. |
| Date of publication | From 2000 | Before 2000 |

The research papers we discuss in this report fall into two categories: (i) core papers describing research on the topic of NHS staff involvement in health research more generally; and (ii) and "case" papers that focus on NHS staff involvement in the context of a

particular project or organisation. The analyses presented in the core body of this report draw on both types of papers. Appendix A highlights individual case-based examples, illustrating key insights from our review in practice.

The insights from the literature review were complemented with interviews with six experts on healthcare professionals' engagement with research, all of whom have agreed to be named in this report. These are:

- Dr John Dean – Clinical Director Quality Improvement and Patient Safety, Royal College of Physicians
- Alastair Henderson – Chief Executive, Academy of Medical Royal Colleges
- Peter Lees – Chief Executive, Faculty of Medical Leadership and Management
- Prof Gillian Leng – Deputy Chief Executive, National Institute for Health and Care Excellence (NICE)
- Dr Rose Jarvis – Improvement and Safety Policy Manager, Academy of Medical Royal Colleges
- Dr Tony Soteriou - Deputy Director, Head of NHS Research Infrastructure and Growth, National Institute for Health Research
- Prof Tim Swanwick – Dean of Education and Leadership Development, Health Education England.

The topic guide for these interviews is presented in Appendix B. Throughout the report, interview evidence is referenced in the form of "Int#"; the numbers do not follow the order in the list presented above. Individuals interviewed were happy to be named as contributors to the research but they have been anonymised in relation to specific points discussed and views expressed, for the purposes of respecting informed consent.

In interpreting the evidence from the wider literature on NHS staff engagement with research and from our consultations with

experts on the topic, we keep in mind THIS Institute's interest in understanding diverse models of engagement, including how "micro contributions" of people's time can best be stimulated – potentially (although not exclusively) via a citizen science platform.

### 1.2.3. Caveats

This research was primarily based on a rapid evidence assessment of the literature, complemented with expert interviews which provided context and added further depth and explanatory power to the findings from the literature review. The research team believes that this combination of methods has ensured a comprehensive assessment of key approaches to involving NHS staff in research and associated enablers and challenges. However, the following caveats should be considered when interpreting the findings:

- We consulted individuals across a range of organisations with experience and expertise with respect to engaging NHS staff in research. However, we recognise that further consultation with a greater number of individuals could help refine some of the insights we present in this report and highlight additional areas that could be relevant to consider in a stakeholder engagement strategy.

- We reviewed articles from a diverse set of sources (see Section 2). However, the literature search was challenging due to the ubiquitous nature of the terms of interest. Consequently, whereas some literature may have initially appeared relevant for understanding NHS engagement in research, in some cases a closer review of abstracts or full-text articles revealed a focus on passive participation in studies, rather than active involvement of NHS staff in shaping study priorities, questions and design or in the conduct of research. In total, as elaborated in Section 2, we

reviewed 47 source documents, including 5 reviews, covering a range of disciplines. However, as identified in the literature itself, there are a number of limitations common to many of the studies analysed. These include:

- Issues relating to generalisability of findings, due to the nature of the samples included in the studies, which were often small, located within a limited geographical area or within a single organisation, or were self-selected and therefore at risk of bias;

- Issues related to variable terminology and inconsistent definitions (for example varying definitions of what is considered a "research active" individual);

- For review articles, issues relating to the fact that many of the studies included have limited external validity for the reasons stated above.

- The focus of the review was on the United Kingdom. This means that literature which may offer transferrable learning from other contexts would not have been covered in this review. An exception would be insights drawn from systematic reviews that included both the UK and other countries.

Despite these caveats, we believe the analysis discussed below provided rounded evidence on key issues to consider in the development of THIS Institute's strategy for engagement with NHS staff.

# 2 Profile of the reviewed literature

This research builds on a review of 47 source documents. Of these, 44 were journal articles and 3 were web-pages relating to a particular engagement initiative (identified via a search of grey literature). The journal articles consisted of: 5 reviews (1 systematic review; 1 narrative review; 1 three-stage, hour-glass shaped review; 1 review with a systematic approach and 1 literature review with an unspecified method); 32 original articles; 3 discussion papers; 1 editorial; 1 brief report; and 1 conference abstract. The original articles reported on studies with a range of designs and methodologies, including qualitative interview studies, questionnaire studies, consensus studies, descriptive case studies and reports on engagement activities and mixed-methods evaluations. Many involved a collaborative or action research approach.

# 3 Why do NHS staff engage with research?

Health professionals in the NHS choose to be involved with research activities for a wide range of reasons. Based on insights from our review of the literature and key informant interviews, the most important reasons include the following:

- **Personal interest in a research or evaluation topic** (1-5) (Int1, Int2, Int4, Int5, Int7) related to a field in which health professionals work (Int1, Int2, Int4), and intellectual curiosity (Int4, Int6).

- **Cultural expectations in some medical disciplines that involvement in research is part of the job role** (Int4, Int6). Attitudes to research vary widely across different healthcare professions. For example, Roberts et al. (2015) suggest that nursing staff have fewer research opportunities and less access to ongoing training compared with doctors (6). Doctors are more likely to be exposed to research training earlier on in their careers and are also exposed to research-related or research-like activities through clinical audits and quality improvement projects and evaluations. In addition, some medical professions recognise research in career pathways more readily than others (5) (Int3, Int4), and are more inclined to make use of conference opportunities, training opportunities and research networks (6).

As highlighted by an expert we consulted in this research: "*If you are training in neurology, it is more likely that you will do a PhD as part of your training. It is similar in renal medicine. However, in geriatrics, it is very unusual for doctors in training to take time out and pursue academic studies*" (Int4). Engaging non-academic clinicians in research is all the more challenging (7, 8). An interviewee we spoke to also highlighted challenges to engaging NHS management professionals in research (Int6).

- **Belief in the importance of research and evidence, and its value for health service improvement, patient care and outcomes** (1, 4, 5, 9) (Int5). NHS staff are more likely to be motivated by research if they believe it has practical relevance in terms of potential to improve the lives of patients (1, 5), and the quality and safety of care that they can deliver (Int1, Int2, Int3, Int5, Int6, Int7). In this context, frustration with existing practice can also drive a desire to engage with research as a vehicle for improvement (Int1, Int2).

- **A positive previous experience of research** increases the motivation of staff to engage in future studies (4, 10). Having previous research experience can help staff to feel more confident about taking up research opportunities (10).

- **Prospects for reputational, career-progression or financial rewards for involvement in research** can act as incentives (3, 5, 7, 11-13) (Int1, Int2, Int7). NHS staff can be motivated to take part in research by the prospect of internal recognition, (such as through awards or promotion prospects) (Int1, Int2, Int3, Int4), recognition through authorship of research papers (Int3, Int7), or reference in a newsletter or through a formal recognition scheme (3). The possibility of financial reward for research activity (for example through pay progression or promotion) can also act as an incentive for engagement (12), while in some clinical professions research is associated with prestige (5) (Int4). Different forms of reward and recognition are explored in more detail in Section 5, which focuses on the enablers of involvement in research.

The strength of particular motivators can vary between different healthcare professions (Int4) as well as within them (e.g. between those working in different types of hospitals with varying degrees of emphasis on research) (Int1, Int2).

# 4 How do NHS staff engage in research?

## 4.1. There are diverse ways in which NHS staff are involved in research

The ways in which health professionals can contribute to research vary widely. This applies across different types of healthcare professions – both clinical and managerial. For example, the literature we reviewed and our consultations with experts identified the involvement of medical specialties, general practice, nursing, midwifery, other allied health professions, pharmacy and healthcare managers.

There is also diversity in the stages of research at which health professionals are involved and in the range of methods used to involve them across projects, both of which differ across research programmes, clinical roles and organisations. This section of the report identifies and categorises the various types of involvement, as well as the mechanisms and methods used, based on insights covered in the literature reviewed. Unlike the literature on patient and public involvement in research, there is a lack of established frameworks in the existing literature for conceptualising healthcare staff involvement.

A paper by Boaz et al. (2015) sought to identify and analyse the range of ways in which health professionals and healthcare provider organisations engage in research. This paper had the specific objective of determining

whether the involvement of clinicians and healthcare organisations in research improves clinical practice. Boaz et al. (2015) reviewed a variety of literature on this topic in a focused review of 33 papers. They found that the involvement of health professionals and healthcare provider organisations in research differs in form and intensity and operates through a variety of mechanisms. They also observed that there is *"no single magic bullet"* (p. 12) for research, but rather a need for multiple strategies to encourage involvement with the aim of improving healthcare performance (14).

In general, across the papers we reviewed, health professionals were seen as essential contributors to clinical research, who are either embedded in research teams or contribute as necessary partners to academic researchers, facilitating efforts to recruit patients or to implement protocols being tested in a trial (1, 5, 11, 15-21). Several papers also discuss the roles played by health professionals in priority setting for research (2, 9, 13, 22-28).

Two studies describe the more strategic involvement of health professionals in research boards or steering committees that engage with a portfolio of projects or research activities. For example, Moore et al. (2012) discuss the involvement of nurses, midwives and managerial staff at an (unnamed) NHS Foundation Trust

**Table 3: Models for engaging healthcare professionals**

| Level of involvement[1] | Model of involvement |
|---|---|
| Consultation: providing feedback and advice to inform research activities | • Responding to consultation on research issues: this involves health researchers listening to clinicians (often alongside other stakeholders, such as patients) and then making decisions informed by their views. Researchers may either engage clinicians directly in discussions about research, or infer research priorities after consulting them about services, interventions (for example treatments or therapies) or health outcomes (27).<br>• Participating in consultation sessions, such as focus groups with other stakeholders, Delphi surveys and consensus development meetings, or online voting (26, 31). |
| Involvement: working directly with research teams | • Standing members of project advisory groups, together with other stakeholders (2, 13).<br>• Members of clinical research networks, such as the National Institute for Health Research's Comprehensive Clinical Research Network, which supports designation and recognition schemes developed between universities and partner NHS Trusts to enable involvement in research among the NHS consultant workforce (3). |
| Collaboration: partnering on equal footing with researchers | • Participation in a forum for deciding research priorities, in collaboration or partnership with researchers and other stakeholders, for example as members of a core steering or advisory group to oversee and supervise the priority-setting process (2, 9, 25-27, 29).<br>• Participation in communities of practice to design and implement research at a local level in collaboration with academics and to disseminate it at national level (31).<br>• Members of project steering committees, for example to build research capacity within an NHS Trust (13).<br>• Co-researchers embedded as members of a research team and contributing to research design, implementation and dissemination (1, 5, 15-21, 52). |

in developing an organisation's research capability by establishing a steering committee for research. The committee's role was to oversee the prioritisation of research topics, define criteria for selecting projects for internal funding, and provide access to expertise to develop more promising proposals into applications for external funding (13). Parkin and Bullock (2005) discuss the involvement of nurses in developing clinical standards for research in an NHS Trust. The standards were developed to fit within the current dynamic quality improvement (DQI) programme and have directly contributed to an evolving culture of research by shaping nurses' awareness, and

offering a support and consultancy network within the Trust. The standards had the primary objective of providing guidance and education whilst developing nurses' skills and capabilities throughout the research process. A baseline survey, conducted to provide a snapshot of research understanding and practice within the Trust following the introduction of the research standards, showed that the implementation of the standards had increased awareness related to both formal and informal educational and research opportunities (29).

The primary models for involving health professionals in research, as identified by our literature review, are described in Table

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1    The levels of involvement used in this table are adapted from a spectrum cited in Manafo et al. (2018) (30), which was developed in order to map different models of patient and public involvement in health research.

3 above. They span three main levels of involvement. The first is *consultation-based* involvement, where health professionals respond to requests for their views or for advice on various research issues, or attend consultation sessions. The second level of involvement identified is *directly working with research teams*, for example in advisory board roles or as members of clinical research networks. The third level is *collaboration with researchers on an equal footing*, for example as co-researchers or members of steering committees. The organising structure set out in Table 3 draws on frameworks described in the wider literature on stakeholder engagement in research. Literature from the patient and public involvement space proved particularly useful in this context, as it offers a more advanced conceptualisation of engagement than the literature on NHS staff engagement.

## 4.2. Tasks and activities engaged in and specific methods used

Health professionals involved in research undertake a wide range of tasks and activities. Table 4, Table 5 and Table 6 show how studies in the literature highlight specific tasks and activities at successive stages of the research process.

Table 4 shows the diversity of contributions made at the research preparation and design phase, for example through involvement with agenda setting, in attracting research funding or in research design. Table 5 discusses involvement at the study implementation phase, in recruitment of study participants, data collection and data analysis. Table 6 discusses involvement in research dissemination, in facilitating research uptake and in evaluation activities.

NHS staff can contribute to research through a variety of methods of engagement. Some examples highlighted in the literature (and elaborated in Table 4, Table 5 and Table 6) include: involvement in priority-setting partnerships[2] and advisory groups for setting research agendas, and responding to consultations to help specify research questions (e.g. through surveys, interviews, meetings, focus groups); drafting funding applications; helping draft research protocols and specify study design; leading systematic reviews; advice on and active involvement in the recruitment of patients for studies; collecting data from research participants; analysis and interpretation of study results and assistance with drafting recommendations; sharing of research insights with policymakers; and participating in reviews of prior research and in evaluations of research tools in a clinical setting.

As discussed in Section 1, we do not examine clinical academic or honorary professorship models of engagement within the scope and focus of this report but recognise them as an additional important model where intensive research is a key part of a job role.

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2       Some examples of insights on NHS staff research interests that already exist in the health system can be found in the James Lind Alliance Priority Setting Partnership's findings on particular topics or in other priority-setting exercises of research charities and professional organisations (Int1). Information can also potentially be found embedded in NHS staff surveys (Int6), Cochrane reviews (Int3), or (to a lesser degree in terms of quality improvement research) in NICE guidance.

**Table 4: Tasks, activities and methods of enabling involvement in research preparation and design**

| Research design and preparation stage | | |
| --- | --- | --- |
| | **Tasks and activities** | **Examples of mechanisms or methods for enabling contributions to tasks and activities** |
| Agenda setting | • Prioritising topics for research (13, 23-28, 32, 33).<br>• Influencing the translation of priorities into the commissioning of research projects and programmes (22, 25). | • **Structured priority-setting collaborations and partnerships**, such as the James Lind Alliance (22, 25, 26, 28) (Int5).<br>• Membership of steering committees or advisory groups (2, 9, 13, 22, 28).<br>• Responding to researcher-led consultation about research priorities (27).<br>• Contributing to priority setting through peer support and research networks (32, 33).<br>• Examples of methods used to engage healthcare staff:<br>  - **In priority setting**: Delphi and nominal group techniques; attending consensus-development conferences and priority-setting workshops; surveys, interviews, online voting and focus groups; literature reviews (22-24, 26, 28).<br>  - **In influencing commissioning of research on priorities**: direct meetings and discussions with funding bodies as part of panels, committees or advisory groups or through sharing information about research priorities with professional organisations that have influence on the funding landscape (22). |
| Attracting research funding | • Leading or contributing to the development of research proposals and funding applications (13, 15, 29). | • **Provision of expert advice** on how to frame ideas into workable projects and write funding applications (13, 15).<br>• Co-applicants on funding calls and contribution to drafting applications (3, 13, 15, 29, 33). |
| Design and procedures | • Leading the design of research in collaboration with other researchers and as part of a team (32, 52).<br>• Acting as advisors to inform project development, for example by specifying research questions or developing data-gathering protocols or research tools (9, 11, 22, 27, 32).<br>• Developing, testing and implementing research frameworks (31).<br>• Collaborating with patients to design a clinical trial (34). | • **Responding to consultation led by research teams**, often alongside input from patients (9, 27, 31).<br>• Attending or organising stakeholder meetings and focus groups (9, 31, 34).<br>• Advising through roles on steering committees (34, 35).<br>• Drafting research protocols (e.g. survey tools, trial protocols) and gathering patient or other stakeholder feedback to improve them (22). |

**Table 5: Tasks, activities and methods of enabling involvement in research implementation**

| Research implementation stage | | |
|---|---|---|
| | **Tasks and activities** | **Examples of mechanisms or methods for enabling contributions to tasks and activities** |
| Recruitment of study participants | • Advice on and active involvement in the recruitment of patients for studies (5, 11, 27, 31) (Int1, Int2).<br>• Promoting surveys and encouraging participation in studies by other healthcare professionals or patients (22). | • Directly promoting and raising awareness about research opportunities and engagement needs in their own organisations and externally (22).<br>• Making use of individual and organisational networks to facilitate recruitment: acting as system stewards (27, 31) (Int1, Int2, Int3, Int7). |
| Data collection | • Collecting data from research participants (9, 11, 22, 52).<br>• Recording information and data (11, 35). | • Telephone and online surveys, workshops, interviews and focus groups (22, 25, 32).<br>• Reviews of literature and documentation (28, 35).<br>• Observation of patient care as part of research to identify opportunities for improvement (35).<br>• Consensus building using Delphi surveys involving a cross-section of practitioners in a discipline, such as mental health or emergency care (23, 24). |
| Data analysis | • Actively conducting data analysis tasks, either independently or with other stakeholders (e.g. data from consensus-building exercises, trials, systematic reviews) (22, 28, 32, 34, 49, 52).<br>• Involvement in the interpretation of data and in establishing recommendations (28, 34-36). | • Sifting and analysing data from priority-setting and consensus-building exercises (22, 28, 32, 34).<br>• Analysing and interpreting data on patient perspectives from focus groups and online surveys (28, 34).<br>• Contributing to the development of practice recommendations through Delphi surveys, workshops and observation (35, 36).<br>• Analysing survey and focus group data (22, 28, 34).<br>• Leading and taking part in systematic literature review analysis (28).<br>• Evaluating research tools produced by others or interventions for their use in clinical settings (35, 36). |

**Table 6: Tasks, activities and methods of enabling involvement in cross-cutting activities**

| Cross-cutting activities: evaluation, dissemination and facilitation of evidence uptake | | |
|---|---|---|
| | **Tasks and activities** | **Examples of mechanisms or methods for enabling contributions to tasks and activities** |
| Dissemination and facilitating uptake | • Involvement in the production of journal outputs or research reports (29).<br>• Disseminating research findings to policymakers (22) (Int1, Int2, Int3).<br>• Disseminating research findings to academics and other practitioners (29, 31). | • Communities of practice to disseminate research at national level (31).<br>• Sharing of research insights with policymakers and other healthcare professionals, for example as members of professional associations and medical societies (22) (Int1, Int2, Int3).<br>• Discussing implementation of findings about research priorities with the National Institute for Health Research (22).<br>• Open communication and dialogue with academic researchers (31).<br>• Compiling a participant sample to provide an email list for information exchange on research and development (32). |
| Evaluation of research | • Critically appraising research outputs (29, 35, 36). | • This could include reviews of research studies, evaluations of research tools or clinical assessment tools developed through research (36), or other types of engagement that provide feedback on research but may not be defined as evaluations in a strict methodological sense.<br>• It is more frequent for healthcare professions to engage in evaluation of service interventions in a practical setting (e.g. in trials, pilots) (Int5). |

# 5 How can the involvement of NHS staff in research be enabled and rewarded?

Many organisational factors – structural, governance and management-related, and cultural – can facilitate the involvement of NHS staff in research (1, 6-8, 13, 15, 25, 37) (Int1, Int2, Int3). It is not one factor but a combination of them that can support enabling environments (14). For example, leadership that champions research is important for motivating staff within organisations or professional networks to contribute to research activities (3, 4, 14, 25, 37) (Int1, Int2, Int7). In addition, individuals also need to be connected with collaborators (1, 3, 8, 9, 25, 31, 37), supported through training, mentorship and feedback (6, 13, 25, 37-39) (Int1, Int2), and enabled by organisational policies and procedures which make research feasible and valued (4, 6-8, 13, 14) (Int3, Int7).

In a systematic literature review which involved a focused review of 33 papers from 15 clinical fields and 9 different countries, Boaz et al. (2015) conclude that involvement in research operates through a variety of mechanisms and that, while there is no single key strategy, there is a need for multiple parallel strategies to enhance engagement (14).

Examples of factors that facilitate NHS staff's involvement in research (as identified through our literature review and interviews), and the studies that include them, are overviewed in Table 7. They span enablers related to:

- *Governance, management and infrastructure:* such as clear guidance and procedures for NHS staff that outline how to develop and implement research; formal research roles within NHS organisations; organisational practices which free up time and headspace for NHS staff to engage with research; user-friendly platforms for engaging NHS staff; and mechanisms for awareness-raising about involvement opportunities.

- *Individual and organisational capacity to support involvement with research:* such as access to training for NHS staff to develop research skills; mentoring; integration of research within clinical practice through the promotion of evidence-based practice; and collaborations with research-active organisations.

- *Culture, behaviours and attitudes:* such as organisational leadership that values and supports research; recognition and awards for involvement (reputational awards, career progression and promotion-related rewards); and a culture of feedback and information-sharing about staff impact on research and research impact on health service improvement.

**Table 7: Enablers of engagement**

| Type of enabler | Examples |
|---|---|
| Governance, management and infrastructure | • Formal roles such as the appointment of research champions within organisations to develop research ideas and promote interest and involvement in research (6, 7, 13, 51) (Int3). This might involve appointing a lead consultant for research or a research champion from each staff discipline, with the objective of stimulating and facilitating participation (6, 7).<br><br>• Clear guidelines and procedures for developing and implementing research to assist healthcare staff (13, 14). One paper found that NHS staff who are motivated to undertake research are helped where there is a clear pathway for the development and implementation of innovative research ideas (13). Clear policies and guidance on the implementation of research can support an enabling climate for involvement (14). In response to feedback received via a survey to NIHR Clinical Research Network staff, the NIHR has recently launched a new package of resources to better support its funded staff in raising awareness of research amongst non-research clinical and care colleagues (40). These resources, hosted on the NIHR website, include a toolkit (including posters, leaflets, videos and other materials to support the promotion of research), along with a series of best practice case studies showcasing initiatives that have successfully engaged people in health research or promoted research within particular organisations (50).<br><br>• Organisational practices which free up time and headspace to engage with research (1, 7, 8, 15, 25, 37) (Int1, Int2,Int7), such as supporting research through programmed activities that are part of clinical job structures and other ways of ensuring protected time for research (7, 8).<br><br>• Well-designed organisational time-management procedures that support and recognise engagement with research (4, 7, 8). French and Stavropoulou (2016) highlight that staff need the flexibility to manage their time and to know that their research activity is recognised in organisational time-management systems (4).<br><br>• The availability and accessibility of funding for research (8, 25, 39)(Int3).<br><br>• Financial recognition through pay progression (12) (Int3).<br><br>• Mechanisms for awareness-raising about involvement opportunities for NHS staff (24) (Int3). This should be accompanied by clear communication about how different professions can engage, why their contributions are matter, and what value they can add. This information needs to be conveyed in an accessible language (Int3).<br><br>• An enabling general research infrastructure, for example in relation to equipment, facilities and information, and communications (8, 25, 33, 39). User-friendly and engaging platforms for contributing to research and an enjoyable user experience are important (Int3, Int4). |

| Type of enabler | Examples |
|---|---|
| Capacity to be involved | • **Access to training for NHS staff to develop their research skills and confidence to engage with research** (6, 13, 25, 37-39). An awareness of what training is available and how to access it can help promote research-friendly cultures (37, 38).<br><br>• **Training and mentoring** (7, 13, 15, 25). The appointment of mentors can be valuable to guide and support individuals involved in research (13). Similarly, one study found that informal teaching by experienced staff, not necessarily labelled or recognised as mentoring, can help to motivate and guide new researchers (7). Exposure to research training in early career stages is more likely to enable supportive attitudes and to cultivate an interest in research later in careers (Int4).<br><br>• **Integration of research within clinical practice** (3-5, 9) (Int1, Int2), including through cultures that promote involvement with evidence in informing care delivery practices and decision making (3, 4) (Int1, Int2). Staff are more likely to participate in studies that are not disruptive to normal clinical practice and that they do not perceive as placing a burden on patients (4, 9) (Int1, Int2).<br><br>• **Collaboration with other organisations and individuals with an active interest in research** (1, 3, 8, 9, 25, 31, 37). Several studies note that the participation of NHS staff in research is enabled when their organisation has supportive links, partnerships or networks with charities, research partners in academia or other NHS organisations or industry bodies with an active interest in commissioning or undertaking research (1, 3, 25). Collaboration with "*system stewards*" (Int2) and "*trusted intermediaries*" (Int1), individuals and organisations that can broker further enabling networks and relationships are important in enabling efficient and effective research experiences (Int1, Int2). |
| Cultural, behavioural and attitudinal enablers | • **Organisational leadership and culture which values and promotes research activity** (3, 4, 14, 25, 37) (Int1, Int2, Int7). For example, one study found that a Trust board which highlights the importance of research to the wider Trust community and to commissioners can enhance research capacity across the organisation (3). However, leadership is needed across professions (clinical, managerial and executive) and hierarchies (Int2, Int6).<br><br>• **Recognition and awards for involvement in research** (3, 5, 7, 11-13, 54) (Int3). Examples include: recognition in publications or newsletters (13) (Int3); internal organisational award schemes or recognition by professional associations, such as through certificates and professional society awards (3, 11) (Int1, Int2); and promotion−related recognition (12). Evidence on the extent to which Continuing Professional Development (CPD) points would be an enabler of NHS staff engagement with research is mixed but there is a general view that mechanisms that contribute to career pathways and professional development trajectories (including appraisal-related, revalidation-related and promotion-related levers) are an enabler (3, 5, 7, 12, 13) (Int1, Int2, Int3, Int4, Int5, Int7).<br><br>• **A compelling narrative about the purpose of the research and its potential impact** (1, 5) (Int2, Int4). Two studies found that NHS staff are more motivated by research they believe will improve the lives of patients (1, 5). Therefore, clear communication about the objectives of research may be important in enabling sustained interest (Int2). As emphasised by an expert we interviewed: *"A lot of doctors get phishing emails saying can you give a little of your time to participate in this and here is the financial reward − this would just be deleted − thinking about what's in it for them and why it is relevant for their job [is important]."* (Int4).<br><br>• **A culture of feedback and of information-sharing about the impact of staff contributions to research** and about wider research impacts on service improvement (5, 6) (Int1, Int2) can enable sustained engagement. This needs to be accompanied by supportive organisational mechanisms for feedback (Int1, Int2).<br><br>• **Effective mechanisms for the dissemination of research findings.** Dissemination of research findings, particularly those with a positive impact on patient outcomes, can inspire and encourage NHS staff to engage with research (39). |

The boundaries between enablers and rewards can be blurred, as an enabling experience can be rewarding in and of itself. Key types of rewards considered in the literature (and based on our analysis of it) or identified by interviewees, highlight the importance of both intrinsic rewards (related to the experience of engagement) and tangible rewards for contributing (career-development related, reputational and financial). Examples include the following:

- **Professional development opportunities, spanning learning and career progression** (3, 5, 7, 11-13) (Int1, Int2, Int3, Int4). Although prospects for promotion, recognition within professional communities and organisations, and personal learning all matter, one expert consulted for this study also highlighted the rewarding nature of being able to do something different and at least temporarily "*step off the hamster wheel of patient care*" (Int4).

> A lot of doctors get phishing emails saying can you give a little of your time to participate in this and here is the financial reward – this would just be deleted – thinking about what's in it for them and why it is relevant for their job [is important]. *(Int4)*

- **Recognition and kudos within professional communities and organisations** (5, 13) (Int1, Int2, Int3).
- **Seeing impact on practice** (39) (Int5).
- **Financial rewards** were seen as enabling by some experts we consulted but there were differences in views about whether or not they were a reward in and of themselves (Int3, Int4).

# 6 Challenges to engaging NHS staff in research

NHS staff have an essential role to play in many aspects of healthcare research. Their knowledge of frontline evidence needs and gaps makes them well placed to inform the prioritisation of topics for research in the healthcare system (9, 27), as well as to contribute to the conduct and dissemination of research (5, 16). However, there are a number of areas which frequently present challenges and barriers to engaging healthcare professionals across disciplines in research activities.

Table 8 below provides an overview of the barriers and challenges to NHS staff involvement with research which were raised in the literature and in our consultations with experts. They span governance, management and administration-related challenges; challenges related to individual and organisational capacities to engage; administrative and management challenges; and challenges related to culture, values and attitudes. Frequently mentioned examples include:

- **Lack of time** (4, 5, 7, 8, 12, 13, 25, 33) (Int1, Int2, Int3, Int5). This can be compounded by project fatigue, which is why a compelling narrative on the importance and relevance of a project and on the value individuals add is paramount (Int1, Int2, Int7).
- **Lack of funding to support engagement** (2, 9, 13, 37, 41).
- **Lack of knowledge, skills and confidence** (4, 10, 12, 29). This is also sometimes related to a lack of exposure to research during medical education and careers for some healthcare professions (Int6). As highlighted by one interviewee, exposure to research tends to be more integral to the acute sector and mental health, than to primary care (Int6).
- **Difficulties in accessing relevant training or mentorship support** (1, 3, 5, 6, 15, 37).
- **Lack of support by leadership** (3-6, 12, 13, 33, 37, 39) (Int1, Int3).

**Table 8: Challenges to involving healthcare professionals in research**

| Type of challenge | Examples |
|---|---|
| Governance, management and administration | • Lack of sufficient funding for research (2, 5, 9, 12, 13, 37, 41). Several studies highlight the challenges associated with the lack of funding (5, 9, 12, 13, 41) or uncertainty about where and how to look for funding and access it (37). One study found that financial constraints can also be exacerbated when the level of demand placed on resources is initially underestimated (2).<br><br>• A weak or opaque governance and management infrastructure (3, 13). For example, an unclear, inadequate or unwieldy bureaucracy for R&D approvals can inhibit research applications (3). Another barrier is that staff members may simply not be aware of frameworks that support R&D within the Trust (13).<br><br>• Lack of clear leadership and definition of roles within research projects. In large collaborative projects, there may be a lack of clarity about responsibilities and health professionals may be deterred from participating if there is uncertainty about who will oversee which aspects of the work (33).<br><br>• Insufficient recognition of research contributions in job plans, appraisal systems and career pathways (3, 10, 12, 13). The incentive of staff to engage may be undermined if there is no formal recognition of their research activities in appraisal systems (13), and if job plans do not include dedicated incentives and time to engage in research (3). |
| Individual and organisational capacity to engage | • A lack of dedicated time for health practitioners and managers to be involved in research, in particular given the frontline service delivery demands placed on doctors and nurses (3-5, 7, 8, 12, 13, 25, 33) (Int1, Int2, Int3, Int5). The lack of capacity to devote sufficient time and energy to research activities is a common issue affecting all groups of NHS staff. Moore et al. (2012) observe that the overwhelming priority for most NHS staff is their daily clinical activities. According to Moore et al. (2012), there is a common perception that innovation and research activity take a great deal of time, and uncertainty and trepidation among healthcare professionals about how research activities can be accommodated within their busy daily schedules (13). Two studies focusing on clinicians and pharmacists cite teaching commitments within the NHS or a university as further limiting their time to participate in research (8, 12). Time-related challenges can be accentuated by a concern that research activities often have to be undertaken outside normal working hours. Some organisations find it difficult to fully support protected time away from clinical duties to undertake research (25). A lack of dedicated time for research activity was seen in one study as a significant barrier, supporting the notion that research is additional rather than part of one's usual role (37). A study looking at pharmacists found that many pharmacists, across diverse roles and backgrounds, find it challenging to engage in research within regular working hours (33).<br><br>• A lack of knowledge and skills about how to do research, which is identified as particularly important barrier for nurses, midwives and allied health professionals (4, 10, 12, 29). Nurses may lack the confidence to participate in medical research, especially if it features quantitative methods, confusing research-related terminology, or a complex invitation process (10, 29).<br><br>• Lack of access to relevant training (1, 3, 6, 15, 37). While this is a significant barrier for all groups, Roberts et al. (2015) suggest that nursing staff have fewer research opportunities and less access to ongoing training compared with doctors, who are more likely than other staff disciplines to encounter research opportunities and training earlier in their careers (6). |

| Type of challenge | Examples |
|---|---|
| Challenges related to culture, values and attitudes | • A lack of support by leadership (3, 4, 6, 12, 13, 33, 37, 39) (Int1, Int3). Some staff report difficulties in engaging with research due to perceptions of a lack of permission from leadership to take time from their core service-delivery job (33). Healthcare managers may be perceived as not interested in supporting research, and preoccupied with cost-containment or reducing waiting lists (37). |
| | • A lack of strategic planning for R&D at organisational level (29, 33). One study found that if leaders do not recognise and value the link between research and the quality and safety of care, they may perceive that patient service is at risk of suffering if healthcare practitioners spend time on research (33). |
| | • Divergent views among NHS stakeholders about what is important to research (6, 25). Differences of opinion about which priorities are important to address can lead to conflict about where to channel research interests (25). Additionally, the involvement of NHS staff can be hampered by divergent views between the R&D department in a Trust and the clinical research network (6). |
| | • A perception that research is a specialist activity (6, 13). Some health professionals see research as outside their domain, limiting the diversity in the types of staff who engage with research. A study in one (unnamed) NHS Foundation Trust found that there was no real expectation among participants that nurses or midwives would lead research (13). In another study, survey results from a clinic showed that doctors had stronger incentives to conduct research than other health professionals (6), which resonates with interview evidence on the acute sector in particular, and is seen as being related to their greater exposure to research during medical education and cultural expectations of roles (Int6). |
| | • A perceived inability to influence practice. For example, McNicholl et al. (2008) found that nurses were not motivated to engage actively in research because they did not feel they were in a position to influence change within clinical practice (12). |
| | • A perception among health professionals that it can be difficult to work with research teams in academia (4, 12). One paper found that nurses report it to be challenging to work with research teams they perceive to be uncommunicative, unapproachable or inefficient (4). Research teams may also lack regular staff meetings, so it can be challenging to explore ideas and develop research with them (12). |
| | • Concern that the actual time needed for research activities is underestimated by research teams (4, 25). For example, in one study, those with research experience commented that the work needed to recruit patients to studies could be more complex and time-consuming than is typically anticipated at research planning stages (4). |

# 7 What impact does NHS staff engagement have on research?

Overall, evidence on the impact of involving healthcare professionals is scarce and there is a lack of evaluation frameworks to guide those seeking to assess engagement processes and impacts. Evaluation frameworks in the patient and public involvement space may offer transferable learning but have not been applied to NHS staff engagement specifically.[3] Initiatives such as the NIHR Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) have been the subject of reviews and evaluations using theory-driven approaches, but CLAHRCs are based more on a fellowship model of involvement that is outside the focus of this study.

The majority of papers that discuss impacts tend to focus on the perceived benefits inferred from evidence provided by research teams and healthcare practitioners, some of which is anecdotal, rather than seeking to evaluate impact in a systematic way. This applies both to papers based on evidence in relation to specific projects or data collection from individuals (9, 12, 13, 16) and to papers that synthesise or respond to existing literature (5, 19, 27).

A notable exception is a meta-analysis by Boaz et al. (2015) which sought specifically to assess from existing literature whether the involvement in research of healthcare professionals and healthcare provider organisations improves healthcare performance. This review was structured in three phases: a planning and mapping stage, a focused review concentrating on the core question of whether or not research involvement improves healthcare performance, and a wider (but less systematic) review of papers identified during the two earlier stages, focusing on mechanisms. The focused review drew on 33 papers covering 15 clinical fields and 9 countries, including the UK. It found that 28 of the papers reported improvements in health service performance associated with healthcare professionals' involvement with research, with some of the studies also reporting better health outcomes and overall processes of care due to increased research engagement. However, its exclusive focus is the impact on health service performance, and it did not seek to identify wider potential impacts, such as the impact on the healthcare professionals taking part in the research or the

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3    A number of recently published articles and reports set out frameworks or reporting guidelines to assist health (and other) researchers in planning, conducting and evaluating the impact of patient and public involvement. Key examples include: the Public Involvement in Research Standards (Standards Development Partnership 2018) (42), the Patient-Centered Outcomes Research Institute Evaluation framework (43), the Public Involvement Impact Assessment Framework (44), and Guidance for Reporting the Involvement of Patients and the Public (45).

impact of their involvement on the design and execution of the research itself (14).

Although there is a lack of evidence based on rigorous and systematic evaluations of impact, a range of potential benefits from involving healthcare professionals in research are identified in the literature, and we found no discussion of any potential disadvantages. We identified four categories of potential impact:

- *Impact on research studies,* including on priority setting,[4] on the quality of study designs and methods and their relevance for the health service and patients, and on facilitating participant recruitment, study implementation, communication and dissemination;

- *Impact on the wider research system,* for example through attracting funding for research and through increasing the willingness of colleagues to engage with research;

- *Impact on clinical practice*, for example through spreading knowledge about evidence-based practices;[5]

- *Personal impact on individuals,* for example through the development of new skills and through professional development and career progression.

Further detail and an overview of the impacts discussed in the literature is provided in Table 9.

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4      We have not come across systematic evaluation evidence of impact from the priorities identified (for example through key approaches such as James Lind Alliance priority-setting partnerships) on the uptake and translation of those priorities into research funding calls.

5      For example, the literature on clinical academic and research fellowship models, though outside the scope of this review, places emphasis on improving absorptive capacities and impact on improving reputations of hospitals and providers where staff are research-active (46).

**Table 9: Potential impacts from involving healthcare professionals**

| Category of potential impact | Examples of potential impacts |
|---|---|
| Impact on research studies | • Priority setting<br><br>  - **Informing recommendations for future research and increasing the relevance of research for the health service and patients**. This may entail clinicians contributing to the identification or prioritisation of topics deserving research, or the specification of research questions or measures to use in research (22, 27, 28). Professional stakeholders can contribute experiential knowledge of healthcare which assists project development and provides added value as it enhances the likelihood of the findings having relevance (9, 22, 28, 35, 36).<br><br>• Study design<br><br>  - **Improving research design through the use of specialist or organisational knowledge** (13, 16, 34). Healthcare professionals with specialist knowledge can inform and improve the design of a clinical trial (34). Alternatively, NHS staff who are familiar with a Trust's structures and processes for building research capacity are well placed to use local knowledge to help design and implement research projects, and to understand how research can be made to work within specific organisational contexts (13). Research design in one Trust was improved by involving healthcare management staff acting in the role of "management fellows" who could use contextual understanding to improve the design of data collection tools and processes (16).<br><br>  - **Informing decision making about both the intervention and valid comparators to use in a trial.** Healthcare professionals can inform decision making about both the intervention and comparators to use in the main research question and the focus of sub-questions used to assess other aspects of the project (9).<br><br>• Participant recruitment<br><br>  - **Assistance with recruitment**. According to Bullock et al. (2012, 4) clinical and managerial staff can help with the recruitment of study sites and participants "by being 'on the inside', knowing 'the gatekeepers' and 'key informants', and 'being able to engage them' (16). Healthcare professionals who are embedded in wider research networks or who are respected in professional communities can help attract other healthcare staff to contribute to research (Int1, Int2, Int7).<br><br>• Study implementation<br><br>  - **Practical advice on data collection**. For example, healthcare managers advised one research team on how to maximise the chances of staff opening and reading an email containing an online survey link, in the knowledge that staff deleted a lot of emails without reading them (16).<br><br>  - **Challenging the assumptions of academic researchers**. A dialogue with practitioners may be valuable to challenge researchers' assumptions, thereby averting the risk that findings are inappropriately derived and of limited use to practitioners (19).<br><br>• Communication and dissemination<br><br>  - **Impact on ensuring a flow of ideas between clinical practice and academic research**. A physician involved in research can act as a "double agent" who can improve the quality of both clinical services and research studies by helping to disseminate evidence-based approaches to treatment (5).<br><br>  - **Providing advice and assistance with dissemination.** For example, healthcare managers involved in one study were reported to have contributed to the relevance of the research by offering guidance and supporting dissemination activities (16). |

| Category of potential impact | Examples of potential impacts |
|---|---|
| Impact on the wider research system | • **Increasing the ability and willingness of medical staff to use research.** Better co-ordination of research involvement can improve the effectiveness of research through the development of research networks. Some successful initiatives have re-shaped relations between clinical research and healthcare practitioners. Examples include the National Institutes of Health (NIH) Road Map in the USA, the NIHR CLAHRCs, and the Academic Health Science Networks (AHSNs) in the UK (14).<br>• **Attracting funding and resources through research grants.** Physicians have opportunities to obtain research grants, which helps healthcare organisations to retain talent, knowledge and skills (5). |
| Impact on clinical practice | • **Contributing to improved healthcare performance.** Some organisations deliberately integrate the research function into organisational structures so that it can influence clinical practice. Mechanisms such as collaborative and action research can increase the degree of correlation between research engagement and improvements in healthcare performance (14, 53).<br>• **Spreading knowledge and promoting innovation** (5, 12). The involvement of practitioners in research contributes to the expanding knowledge base of medicine and provides physicians with an opportunity to offer patients cutting-edge therapies (5). Even though small proportions of nursing staff have research published, engaging them in research activity leads to improved nursing practitioners' thinking (12). |
| Personal impact on individuals | • **Individual benefits for healthcare professionals in terms of personal learning, fulfilment in their roles, and a feeling of contributing to service improvement and patient benefit** (1, 3-5, 7, 9, 11-13) (Int1, Int2, Int5). Involvement in clinical research opens the eyes of physicians to medical innovation, satisfies their intellectual curiosity, and may assist career advancement (5). |

# 8 In reflection: key learning points and areas for consideration in future practice

## 8.1. There is potential for a wider range of healthcare professionals to engage with research

Based on the learning presented throughout this report, in this chapter we offer some recommendations for organisations to consider when developing their strategies for engaging NHS staff in research. We hope that these will be helpful in informing both THIS Institute's evolving work and the efforts of wider stakeholders in the health research system to mobilise the knowledge, expertise, energy and commitment of NHS staff to improve the evidence that informs their everyday practice.

We do not seek to be prescriptive in the areas for consideration we set out below. Rather, they serve to inform further constructive dialogue about how THIS Institute and other organisations can attract, retain, enable and empower those who provide care or support the NHS through management, administrative and other roles, to work alongside them and to help ensure that the NHS leads the way in providing world-leading evidence on how to improve the quality and safety of healthcare.

The core areas for THIS Institute and other organisations to consider when establishing a strategy for engaging with the health workforce are discussed below. They relate to:

- Preparing for effective involvement;

- Raising awareness about involvement opportunities and recruiting contributors; and

- Creating and sustaining enabling environments for staff engagement throughout the research lifecycle.

## 8.2. Preparing for the involvement of health professionals in research

1. **Effectively involving the NHS workforce in research does not mean that they need to be involved at every stage or in every aspect of the research process.** It will be important for organisations to identify the most meaningful types of contribution on a case-by-case basis, depending on what best fits a project's needs. This could range from consultation on specific aspects of the research, to involving the workforce in specific data gathering and analysis tasks, to full coproduction of the research and its outputs. Decisions will need to be based on both the needs of the research and the feasibility of achieving specific types of contribution, given the operational contexts, motivations and constraints of NHS staff. Some types of engagement are likely to be conducive to citizen science approaches, whilst others may be enacted through more traditional models and methods of collaboration.

2.  **Ensure at the outset that research roles and responsibilities are well defined.** One barrier to involving health professionals in research can be poorly defined roles and responsibilities within research projects, particularly large collaborative projects. Health professionals may be deterred from participating if they do not have clarity about who will oversee which aspects of the work (33) and what is expected of them. Ensuring a shared understanding of the purpose, scope and remit of their roles, and of how they are expected to engage and when, is important for effective collaboration and should be central to how organisations communicate about opportunities for involvement and how they prepare contributors to engage.

3.  **Consider the balance between targeting specific groups and opening up engagement more widely.** Some research opportunities will benefit from the involvement of diverse types of staff (beyond the most obvious targets) while others will require input from a specific community. Organisations should make explicit why and how different professional groups can add value to a research project, and what unique perspectives they could offer. Research on improving the quality and safety of care often focuses on healthcare professions or managerial staff, but administrative staff and even support staff (e.g. porters, receptionists) may have important insights to contribute on specific quality improvement and patient safety issues. Examples include issues relating to the patient journey and experience from entry into a healthcare provider setting through to discharge. In addition, opening up opportunities widely (when appropriate) can have spillover benefits for future engagements, even if a person who is approached does not take up an immediate

opportunity. If someone is not interested in a specific opportunity, they may still come back to an organisational website or browse it for other opportunities that they might be interested in (Int2).

4.  **Organisations should consider accessing existing data sources that shed light on issues that matter to the NHS workforce, in order to complement internal approaches to specifying important research questions and establishing study designs.** In the context of THIS Institute, the principles for prioritising research are described in the Institute's scientific strategy. The expertise of the team and advisory board, coupled with strong networks with diverse organisations and individuals active in improvement research, healthcare delivery and policy, should support informed decisions about priority research areas to support. As part of the process of informing those decisions, it may be helpful to consider whether existing information on the importance of specific research areas (from the perspective of healthcare staff) exists. Evidence from our interviews suggests that information does exist but is often fragmented and piecemeal and can be challenging to access. Some examples of insights on NHS staff research interests can be found in James Lind Alliance Priority Setting Partnership findings on particular topics or in other priority-setting exercises of research charities and professional organisations (Int1). Information can also potentially be found embedded in NHS staff surveys (Int6), Cochrane reviews (Int3) or (to a lesser degree in terms of quality improvement research) in NICE guidance. Data from the Quality and Outcomes Framework may also provide information on quality improvement priorities (Int2, Int3), although not directly

from a healthcare staff perspective. One interviewee suggested that THIS Institute may want to consider including questions about research priorities in NHS staff surveys, noting that this might be "*tricky*" but potentially a very useful source of evidence (Int6).

## 8.3. Raising awareness about opportunities for involvement and recruiting contributors

5. **Frame opportunities for involvement in a way that aligns with what motivates NHS staff to engage with health research and communicate the relevance of the opportunity to their everyday work and job roles.** This includes communicating how research involvement opportunities relate to both personal and professional interests, and making clear the links between the research activity and the potential to improve clinical practice and benefit patients. As one interviewee said, when framing and communicating about opportunities, organisations should think about why a busy clinician would want to engage: "*Why should a person running a geriatric ward, in Bolton, on a Friday night, be interested*?" (Int2). As discussed earlier in this report (Section 3), the drivers for involvement, both within specific professional groups and across them, are diverse. They include: personal interests in a research or evaluation topic (as related to a field within which individuals work); intellectual curiosity; cultural expectations in some medical disciplines that involvement in research is expected as part of the job role; belief in the potential of research to improve health services, patient care and outcomes (which can also be influenced by a prior positive experience with research); and prospects for career progression or other

forms of reputational or financial reward. Where possible, organisations should aim to communicate how the research opportunity relates to these various types of drivers of involvement, while recognising that different drivers are likely to resonate with particular individuals.

6. **Pay attention to the language used in communicating with healthcare staff and avoid unnecessary jargon.** A clear and compelling narrative is important for communicating why an opportunity to get involved with research is important and relevant for an individual, and for making clear why and how they can contribute. The value that individuals can add to research may not immediately be obvious to them and making this clear should be central to a communications strategy for NHS staff engagement. This is also critical in changing attitudes about who has experience or expertise to add, and is likely to be particularly important for the citizen science aspects of THIS Institute's applied research programme.

7. **Consider how best to use established and trusted professional networks, in combination with online or other types of direct awareness-raising and recruitment, to help share information about involvement opportunities and attract and retain NHS staff for an organisation's research activities.** An online approach might be designed to complement, but not be a substitute for, real-world engagement with individuals, organisations and communities (Int3) and for making use of established networks. Involving partners, collaborators and system stewards in raising awareness and helping recruit contributors from across the NHS will be important to reach individuals across different localities and healthcare professions. THIS Institute should consider

working with *professional organisations* and *specialist societies* (e.g. Royal Colleges, medical societies) (Int1, Int2, Int7), *regional networks* (e.g. clinical research networks, CLAHRCs, AHSNs), *special interest groups* attending health services and quality improvement conferences (Int4, Int5), and *organisations such as arms-length bodies* (e.g. NHS Providers, NHS Employers and NHS Confederation) (Int2) in awareness-raising and recruitment of contributors. As one expert consulted for this research commented: *"What I do think is important is where people will hear their messages and requests from. People trust things, on the whole, from their professional organisations and associations."* (Int2). A second expert added "*specialist societies for medical professions*" to this list of trusted organisations (Int1). National policy programmes such as Choosing Wisely, Getting It Right First Time and NHS RightCare may also provide a useful source of helpful contacts and insights (Int1, Int2), as could influential individuals in policy circles (Int6), though independence will always need to be ensured.

## 8.4. Enabling engagement of NHS staff and supporting a learning environment throughout the research process

8.  **Ensure that the mechanisms used to involve healthcare professionals are as user-friendly as possible.** This applies both to online and mobile interfaces for operationalising a citizen science platform for THIS Institute (as an example) and to more traditional approaches (e.g. as they relate to timing of meetings, opportunities for remote contributions, scheduling of contributions). Collaboration and contributions have to fit into the lives of

> What I do think is important is where people will hear their messages and requests from. People trust things, on the whole, from their professional organisations and associations. *(Int2)*

very busy NHS staff and therefore have to not only be relevant but also as easy as possible to execute (Int5, Int7). As discussed earlier in this report (Section 6), lack of time for NHS staff to be involved in research is prominent in the literature, in particular given the frontline service delivery demands placed on frontline staff (3, 5, 8, 12, 13, 25). Engagement with research should – as far as possible – complement, rather than disrupt usual practice, be it conducted on the job, or as part of an individual's spare time (e.g. at home, on mobile devices through the citizen science platform).

9.  **Organisations should consider how their engagement strategy and communication activities can help build links with leadership in healthcare provider organisations and how this can contribute to building a supportive environment and enabling culture for research – including outside of leading research-active healthcare provider settings.** Organisations should consider engaging with executive leadership, middle management and frontline staff on the basis that engagement at all levels is needed to achieve organisational buy-in and supportive organisational environments (Int2, Int6). This engagement may include the following:

    - In the context of its aim to engage a wide range of healthcare professionals

with research, THIS Institute should also consider working with professional associations and specialist societies to raise awareness and support for research engagement outside of foundation Trusts and teaching hospitals – for example with district general hospitals (Int2, Int7). As one expert said: "*You need a real push to get into some standard district general hospitals… It is important it [THIS Institute] does not get perceived as something just belonging to… the Cambridges/Addenbrookes of this world…*" (Int2). Another interviewee, in highlighting the need to engage widely – beyond leading organisations – to change attitudes to improvement and embrace more evidence-based practice, commented: "*… Every organisation should have the capability to be driving improvement. It needs the evidence to underpin it. And I suspect there is an awful lot that gets done in the name of improvement that actually is a waste of time, because it has no basis whatsoever. So you have to get past that with organisations… There are believer organisations, so I suspect there are some places where you could go, where you get a great hearing, great collaboration. And once you have got them on board, you can possibly extend beyond that.*" (Int6).

- The fellows supported through THIS Institute's programme (especially if clinical fellows) may be able to act as research champions within provider organisations, and the Institute could also consider building links with existing research champions in healthcare provider organisations (e.g. influential consultants, nurses, primary care practitioners, R&D directors and others).

According to one interviewee, any organisation with an excellent Care Quality Commission rating could be a "good place to start" (Int6).

- In the context of THIS Institute's focus on research on the quality and safety of healthcare, there is an opportunity to engage a wide range of staff. This includes not only those in disciplines where there are already cultural expectations to engage with research as part of job roles (e.g. medical specialties active in research studies or exposed to research-related or research-like activities through clinical audits and quality improvement projects and evaluations), but also those in less exposed professions (e.g. nursing, primary care) where research capacity could be built.

10. **Whereas it might be outside of the scope of many research organisations (including THIS Institute) to buy out time from healthcare professionals**

… Every organisation should have the capability to be driving improvement. It needs the evidence to underpin it. And I suspect there is an awful lot that gets done in the name of improvement that actually is a waste of time, because it has no basis whatsoever. So you have to get past that with organisations… There are believer organisations, so I suspect there are some places where you could go, where you get a great hearing, great collaboration. And once you have got them on board, you can possibly extend beyond that. *(Int6)*

**for research activities, engaging with leadership and system stewards in the health system could help nudge cultures and influence leadership to create time and headspace for staff in healthcare provider organisations to engage with research.** Engaging with system stewards can also help raise awareness about opportunities to make micro contributions out of personal interest, and outside of working hours (e.g. through user-friendly, individually short but meaningful tasks on a citizen science platform).THIS Institute is pioneering the application of citizen science methods to health research (in addition to its fellowship programmes and programmes to advance the science and theory of improvement science and other aspects of its applied research programme). This citizen science model has the potential to alleviate the concerns of some NHS leaders about the time research can take away from clinical service activities of frontline staff. It could do this while simultaneously enabling a new, practical and pragmatic way for the NHS to contribute to and benefit from the evidence base on how to improve the quality and safety of care.

11. **Ensure that opportunities to recognise and reward involvement in research are created and communicated to healthcare professionals.** This includes making clear how contributions will be acknowledged, and how feedback on the progress and impact of research will be communicated. It also involves working with professional bodies to consider benefits and rewards for the career development of a broad range of NHS staff across clinical, managerial and administrative professions. As discussed in Section 5, the prospect of internal recognition is important. This recognition could take the form of awards or promotion

prospects, recognition through authorship of research papers, or reference in a newsletter or through a formal recognition scheme. THIS Institute and other research organisations should consider working with NHS Trusts, universities and professional associations to develop and raise the profile of such awards and incentives. However, the Institute may also want to engage with bodies involved with appraisal systems, validation and career promotion practices at national levels (including the General Medical Council, Royal Colleges, Health Education England). Whereas CPD points as an enabler of engagement drew mixed views amongst those we interviewed (and overall were not seen as a key reward, although potentially attractive as part of a broader mix), the general principle of recognition in professional development, career promotion and development pathways was widely acknowledged and supported. Some individuals also suggested reflecting on how links with the University of Cambridge and the prestige that brings could be brought into reward mechanisms (e.g. certificates for a meaningful contribution, exploring options for affiliation) (Int1, Int2, Int6).

12. **Organisations should reflect on what role they can play in building wider research capacity in the health system – for example through acting as a broker of information on training and mentorship support available within the existing system architecture, and directly through developing training and guidance materials.** Our research has highlighted how critical it is for healthcare staff to feel empowered and supported in delivering research contributions. To enable effective engagement and sustain enthusiasm, it is important to clearly communicate to health professionals what training and

related support they can access to build their skills and confidence to be involved with research and to effectively contribute to tasks. For example, THIS Institute could consider working with partners to establish a repository of training sources and materials. The helpful role of the Institute as an information and evidence broker was raised by an interviewee, and although the primary focus of such a role is on quality and safety improvement evidence (Int2), extending this to a supportive information infrastructure could provide added value for the health system.

13. **At the onset of a project, establish evaluation plans for assessing and learning about the process, outcomes and impacts of NHS staff's engagement with research, and commit to sharing and disseminating learning from such evaluations.** Evaluation plans should be based around a clear understanding of the roles that NHS contributors are expected to play in a research project or initiative, the desired outcomes and impacts from their involvement, and how they will be supported to engage effectively. The evaluation plans for each project should make clear whether the focus of the evaluation is on the quality of the staff engagement *process* itself or on the *outcomes and impacts* from it, or both. Reporting on the evaluation process and sharing learning from it widely can add to the scarce evidence base on how to evaluate healthcare staff's contributions to research. THIS Institute is in a unique position to help build an evidence base on how to evaluate innovative means of healthcare staff engagement, including citizen-science based approaches.

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# Appendix A. Examples of NHS staff involvement in practice

Throughout this report, we have discussed a diverse set of approaches to involving NHS staff in research, as well as associated enablers and challenges, and potential impacts. The examples below illustrate this learning in practice. They span examples of both project-level NHS staff involvement and initiatives seeking to facilitate NHS staff involvement across a variety of projects and programmes. They are based on examples from papers we reviewed for this research and were selected in consultation with THIS Institute.

## Project-specific examples of NHS staff involvement in research

**Box 1: Involving NHS staff in developing and evaluating an outpatient discharge checklist**

**The development and clinical evaluation of a dermatology outpatient discharge information checklist**

What was the research project or initiative about?
This study aimed to create an outpatient discharge checklist for dermatology outpatients, through consultation with dermatologists. It also aimed to engage clinicians in attaining feedback on how useful the checklist was.

How were NHS staff involved?
Seventeen dermatologist consultants participated in a Delphi questionnaire that consisted of 72 items which were rated by the consultants based on their perceived importance for carrying out a discharge. These consultants came from five NHS Trusts within England and Wales.

In a pilot study, the checklist was evaluated by six clinicians who provided feedback on the usefulness of the checklist, on whether it aided their thought process during discharge, whether the items in the checklist were adequate, and on questions related to its future use. The checklist was also evaluated by 18 clinicians for its use during clinical assessment at an outpatient clinic.

What enabled engagement?
Although enablers are not discussed in the paper, it should be noted that 15 of the 17 consultants that participated in the Delphi questionnaire were from teaching hospitals active in research which – although speculative – may have created an enabling environment.

### What were the challenges?
Challenges to clinician engagement with research are not discussed. However, challenges in terms of utility of the checklist for helping clinicians in their thought processes were identified, despite the Delphi method being successful in identifying items that should be included on the checklist based on the views of the same individuals.

### Impacts
Changes were made to the checklist's wording and content based on the evaluation by the six clinicians during the pilot. This made the checklist more understandable to users and aimed to enhance relevance.

Source: Harun, Nur Ainita, Andrew Yule Finlay, M. Sam Salek and Vincent Piguet. 2016. 'The development and clinical evaluation of a 'traffic-light' design dermatology outpatient discharge information checklist'. *British Journal of Dermatology* 175(3): 572–82. doi:10.1111/bjd.14650 (36).

**Box 2: Involving nurses in the design of a new nursing bag**

**NHS at Home: A Co-design Research Project to Develop a 21st Century Nursing Bag**

### What was the research project or initiative about?
The objective of this research project was to identify clinical and design aspects of a new nursing bag that would be used in a domestic environment. The intention of developing this new bag was that it would lead to improvements in the delivery of services and patient safety, through standardising bag design and contents. This process used a co-design method with individuals working in the NHS to adapt the bag to better meet the current needs of NHS service delivery. A literature review was also undertaken.

### How were NHS staff involved?
A steering group consisting of service improvement managers, community matrons and specialists in infection control participated in five workshops to inform the decisions surrounding the design of the bag and to test and evaluate it. Nurses were also observed while they were treating patients at home to understand the conditions in which they work and to use those insights to inform issues relevant to bag design and contents.

### What enabled engagement?
No enablers were discussed.

### What were the challenges?
No challenges were discussed.

### Impacts
Healthcare professionals involved in the workshops on bag design and contents could provide a unique perspective on how the bag could be designed to improve their day-to-day working environment. The authors suggest this led to an interdisciplinary partnership which allowed the project to be successful due to the potential performance improvements in patient safety and functionality of the bag.

**Box 3: Using a Delphi survey to identify research priorities of four different stakeholder groups**

**Do different stakeholder groups share mental health research priorities? A four-arm Delphi study**

What was the research project or initiative about?
This study aimed to identify research priorities for four stakeholder groups involved in mental health care through a Delphi method and to investigate the level of agreement between the groups. Groups included mental health practitioners, service managers, service users and carers.

How were NHS staff involved?
One group involved in the Delphi questionnaire included psychiatrists, psychiatric nurses, clinical psychologists, social workers and occupational therapists (35 in total). Another group consisted of 23 service managers. These participants were asked to provide up to five areas within the sector of mental health that they considered to be priority topics for research. The Delphi survey consisted of three rounds, after which the results were compared between the four groups (non-NHS groups included 34 service users and 26 carers).

What enabled engagement?
Practitioners and service managers were already involved with research in the topic area on other grants and projects and had an established interest in mental health research as they were "*all grant holders, those with projects registered with the R&D department and known champions of evidence-based practice*" (Owens et al. 2008, 420). They were invited to participate by the study leads, and extended the invitation to their colleagues.

What were the challenges?
The health practitioners were less likely to agree on research priorities than service users and carers, with only one item receiving full consensus from the group. The authors note that consensus did improve marginally between rounds 2 and 3 of the survey.

Impacts
Impacts of NHS staff involvement on research priority setting were not discussed as the focus of the study was to compare what different stakeholder groups perceived as research priorities in mental health care.

**Box 4: Identifying priorities for research in emergency prehospital care**

**What are the highest priorities for research in emergency prehospital care? Results of a review and Delphi consultation exercise**

What was the research project or initiative about?
The objective of this study was to identify where there were gaps in evidence in relation to the delivery of pre-hospital emergency care. This involved collaboration between an academic research team and healthcare professionals that were part of the 999 EMS Research Forum Board.

How were NHS staff involved?
The study involved members of the 999 EMS Research Forum Board, who included an anaesthetist, a consultant and an ambulance operations manager. Reviews of available website information, consultation with NHS staff and consensus building using the Delphi technique were used in the priority-setting process. The Delphi method was used to rank research priority areas. Twenty-six individuals participated in the first round of the Delphi consultation. Thirty people participated in rounds two and three of the consultation which included individuals from the 999 EMS Research Forum and the Thematic Research network for emergency and UnScheduled Treatment (TRUST), as well as international representatives and R&D leads from ambulance service Trusts.

What enabled engagement?
Although the authors do not identify specific enablers, they do highlight that initial identification of research priorities was undertaken by attendees of AMBEX 2006 (the UK Ambulance Service Association's annual conference), which points to the importance of events that bring together professional communities.

What were the challenges?
No challenges were discussed.

Impacts
The authors suggest that the study was successful as they were able to identify relevant research priorities. The impact that NHS staff involvement had on the study is not specified or discussed.

Source: Snooks, Helen, Angela Evans, Bridget Wells, Julie Peconi, Marie Thomas, Malcolm Woollard, Henry Guly, Emma Jenkinson, Janette Turner, Chris Hartley-Shape, on behalf of the 999 EMS Research Forum Board. 2008. 'What are the highest priorities for research in emergency prehospital care? Results of a review and Delphi consultation exercise'. *Journal of Emergency Primary Health Care* 6(4). doi:10.1136/emj.2008.065862 (24).

**Box 5: Collaboration between staff and patients to increase accrual to a national hormone replacement therapy trial**

**A collaboration between healthcare professionals and patients to design a national hormone replacement therapy trial for women who survived breast cancer**

What was the research project or initiative about?
The aim of this research project was to investigate whether involving women with breast cancer in the design of a multi-site national clinical randomised control trial for the use of hormone replacement therapy (HRT) in breast cancer patients would improve recruitment to the trial. This study was carried out in a three-stage process: 1) consulting women with breast cancer in focus groups in order to get their opinion on the use of HRT and what is acceptable and relevant to this population; 2) using the key themes from the focus groups to inform key priorities to be incorporated into the proposed trial design; and 3) ensuring the key priorities were being accounted for by setting up a Trial Steering Group.

How were staff involved?
In the first stage of the study, stakeholders across three organisations (researchers from the Lynda Jackson Macmillan Centre, patients and health professionals from the Consumers Advisory Group for Clinical Trials (CAG-CT), and clinicians who had run a pilot HRT trial previously) organised and ran nine focus groups with patients and were involved with the analysis of the data. The focus groups examined attitudes towards HRT and menopause as well as the proposed trial design. Following the focus groups, the stakeholders held two decision-making meetings – one to discuss queries and questions pertaining to the proposed HRT trial (specific queries not mentioned in paper), taking into account the scientific rationale and results from the focus groups, and the other to discuss five recommendations based on key themes from the focus groups. These topics were: whether HRT is a research priority, whether there is a need and whether it is appropriate to run a national HRT trial, how best to obtain informed consent from potential future participants, whether women without strong symptoms should be recruited, and how to ensure meaningful results. These five recommendations were presented to the stakeholders by the researchers at the Lynda Jackson Macmillan Centre.

An HRT Trial Steering Group was subsequently formed. It consisted of 18 individuals including clinicians, other staff from the healthcare workforce, academics and a patient advocate. This group met twice during the rest of the research project's duration and circulated a summary draft for the proposed trial design for comment by attendees of the first abovementioned meeting.

What enabled engagement?
Enablers were not discussed specifically in the paper. However, it is worth noting that the clinicians involved with this study had previously been involved with running a pilot HRT trial and were also able to draw on their expertise and participant contacts for this study.

What were the challenges?
Challenges were experienced with obtaining feedback on trial protocols from Trial Steering Group members. This related to competing demands on participant time and to some members of the steering group not feeling sufficiently informed about what was expected of them. Differences in opinion between patients and healthcare workers sometimes arose but were resolved by open discussion between all groups involved.

Impacts

The involvement of healthcare professionals, as well as other stakeholders, facilitated consensus on the type of research that should be undertaken, specifically on how a trial should be designed and implemented. Strategies to regularly update patients and health professionals were put into place in the design of the national HRT trial.

Source: Marsden, Jo and Jane Bradburn. 2004. 'Patient and clinician collaboration in the design of a national randomized breast cancer trial'. *Health Expectations: An International Journal of Public Participation in Health Care and Health Policy* 7(1): 6−17. doi:10.111 1/j.1369−7625.2004.00232. (34).

**Box 6: Priority-setting partnership to identify research priorities in anaesthesia and perioperative care**

**A collaboration between clinicians, patients and carers, and researchers to identify the ten priority questions for anaesthesia and perioperative care research**

What was the research project or initiative about?
The aim was to identify and prioritise research questions for anaesthesia and perioperative care as part of a priority-setting partnership (PSP), highlighting the ten most important questions yet to be answered, and subsequently to disseminate the results in order to impact on the future research agenda in this field.

How were staff involved?
The James Lind Alliance (JLA) facilitated the coming together of 20 healthcare professional organisations and 20 patient or carer organisations for the PSP, attracting nearly 2,000 individuals to the PSP process. Clinicians, alongside patients and carers, were involved in identifying research priorities through surveys (ranking exercises) and via consensus meetings which also included researchers. The team leading the PSP (consisting of 15 individuals across clinical practice, patient representative, research communities and JLA staff) contributed to raising awareness about the PSP and promoting the survey to diverse organisations and individuals.

Twelve of the 15 study team members sat on a steering group for the PSP, and 5 of the members of the steering group members (3 of whom were anaesthetists, of which one was the steering group coordinator) helped classify survey responses into themes, including organising research questions into summary questions and categories. The steering group coordinator also carried out a systematic review to assess whether the proposed 'summary' questions had already been answered in the literature, or whether there were further questions in the literature that should be incorporated. Anaesthetic societies were approached and asked whether there were further questions not brought up in the survey or the literature that should be considered.

A second online survey was sent out to clinicians and patients. The aim of this survey was to for each participant to select the 10 most important research ("summary") questions of the 92 that had been shortlisted following the first survey round. All the responses were subsequently collated and the top 25 selected for discussion during the next stage of the PSP process, a prioritisation workshop. The prioritisation workshop was run by the steering group in which 23

partner organisation representatives participated. The aim was to narrow down the top 25 priority questions from the survey into the top 10.

What enabled engagement?
At the time of publication, the authors worked for organisations with strong expertise in areas in need of research in this field, including research for clinical practice. Over 1,000 clinicians, as well as 700 patients and carers, participated in the priority-setting exercise.

What were the challenges?
The two surveys were actively promoted by the steering group members, but time and budget constraints impeded the ability to advertise as widely as might be optimal. Despite the limitations, the number of survey responses from clinicians and from patients and carers was considered to be good (1,000 and 700, respectively).

Impacts
This PSP led to the identification of priorities which reflected the needs of the diverse stakeholder groups involved. In addition to identifying the top ten priorities for this research area, the PSP has identified and published a longer list of additional research topics. These can be found on the National Institute of Academic Anaesthesia (NIAA) website and via the UK Database of Uncertainties about the Effects of Treatments (UK DUETs).

Sources: Boney, Oliver, Madeline Bell, Natalie Bell, Ann Conquest, Marion Cumbers, Sharon Drake, Mike Galsworthy, Jacqui Gath, Michael P. W. Grocott, Emma Harris, Simon Howell, Anthony Ingold, Michael H. Nathanson, Thomas Pinkney & Leanne Metcalf. 2015. 'Identifying research priorities in anaesthesia and perioperative care: final report of the joint National Institute of Academic Anaesthesia/James Lind Alliance Research Priority-setting Partnership'. *BMJ Open* 5(12). doi:10.1136/bmjopen-2015-010006 (28).

National Institute of Academic Anaesthesia. 2015. 'Anaesthesia and Perioperative Care Priority-setting Partnership'. As of 11 June 2018: https://www.niaa.org.uk/PSP (47).

**Box 7: Engaging staff in identifying research activity in a region and opportunities for further engagement**

**Consulting the health and social care workforce on research activity and future research prospects: learning from a primary care research network**

What was the research project or initiative about?
A Primary Care Research Network (PCRN) commissioned research at a primary care-level NHS region in England. The aims were to identify research activity at the health and social care interface and to identify the level at which staff working for social services could get involved with research and development training, working in conjunction with health practitioners. This research was conducted in two stages. The first focused on working at the health and social care interface and on social services department (SSD) structures in the region, while the second aimed to determine what worked in interagency collaboration and the needs and barriers of research capacity.

### How were staff involved?

The researchers, one of whom was a clinician, gathered data via telephone interviews (over the two stages) and focus groups (only during the second stage). Interviewees and focus group participants were staff working in health or social care and included 61 social care practitioners at a senior level, managers and team leaders, as well as an additional six public health representatives. They were initially identified by the researchers of this study by contacting various SSDs and then expanded via a snowballing process. Although the 61 practitioners (aside from the clinician researcher) were participants in the study rather than actively involved in shaping its design and implementation, they provided useful insights on the challenges of engaging with research.

### What enabled engagement?

No enablers were discussed.

### What were the challenges?

SSD staff who participated in the interviews and focus groups identified a number of barriers for engaging in research, including lack of time related to too many workload commitments (including having a rigid working pattern and not having enough staff available), not having the right skills, not receiving research training, and not seeing research as a career path.

### Impacts

As part of this piece of research, a participant sample for the study was created, which has subsequently been used for email lists and research and development information exchange. Therefore, the authors (including a clinician researcher) developed tools for future use in research and/or service activities at the time and within the research governance system of the time.

**Source:** Cooke, Jo, Jenny Owen & Andrew Wilson. 2002. 'Research and development at the health and social care interface in primary care: a scoping exercise in one National Health Service region.' *Health and Social Care in the Community* 10(6): 435–44. doi:10.104 6/j.1365–2524.2002.00395 (32).

**Box 8: Priority-setting partnership to identify priorities in acne treatment uncertainties**

**A collaboration between researchers, healthcare professionals and patients to identify the top ten treatment uncertainties for patients with acne**

### What was the research project or initiative about?

The aim of this work was to identify and prioritise unanswered questions (uncertainties) about acne treatments as part of a priority-setting partnership (PSP) run by the James Lind Alliance (JLA) through identifying the ten most important research questions yet to be answered. The treatment uncertainties were confined to existing treatments, rather than the creation of new treatments.

### How were staff involved?

A steering group was set up to oversee the PSP. The steering group included dermatologists, academics, research managers, a nurse, a researcher (microbiologist), a pharmacist, the editor of the UK Database of Uncertainties about the Effects of Treatment (UK DUETs), a JLA

staff member (not stated in what capacity) and patients with expertise in patient and public involvement.

The first stage of the PSP involved a survey in which patients (primarily young people with acne) and healthcare professionals were asked to submit their questions on uncertainties related to the treatment of acne. A publicity flier and a survey were drafted and subsequently modified at a meeting in which patients and health professionals reviewed and changed the look and structure of both the flyer and the survey to make it more appealing to young people. Two online versions of the survey were established and administered – one for patients and the other for healthcare professionals. A website containing relevant information on the PSP was also set up to provide further information on the research.

In the second stage of the PSP, steering group members narrowed down the list of initially identified treatment uncertainties from responses to the survey by thematically grouping them. The International Clinical Trials Registry and the Database of Abstracts Reviews of Effects (DARE) were searched in order to ensure that the research topics identified through the PSP processes had not already been answered elsewhere. Patients and healthcare professionals were asked to rank their top three questions from a list of 30 most commonly selected questions on treatment uncertainties identified in the prior round. In the third stage, a priority-setting workshop was held in which nearly equal numbers of patients and healthcare staff (both from within and outside the NHS) participated; 13 and 12 respectively. Participants were given a list of 18 uncertainties that came out of the voting form. The top ten treatment uncertainties were identified via a consensus method.

Throughout the PSP process, organisations were either approached to be involved or volunteered. The responsibilities of the partners were to promote the PSP's work to their network(s) and to the public (for example via newspapers, by emailing contacts, flyers in pharmacies and Twitter.

### What enabled engagement?
Most of the authors were affiliated with NHS Trusts and university departments related to this area of research and had expertise in this area. The partner organisations played a vital role in promoting the survey and encouraging participation. According to Layton et al. (2015), this ensured good representativeness in terms of age, location, ethnic mix, and mix of patients versus professionals.

### What were the challenges?
Keeping the survey open for a longer duration than the originally planned eight weeks helped with response rates for both healthcare professionals and patients. Though not a challenge to healthcare professional staff involvement, Layton et al. (2015) highlight that reaching a representative sample of patients with acne was challenging.

### Impacts
At the time of publication, the researchers were in discussion with the National Institute for Health Research over how best to translate the top ten identified priorities about treatment uncertainties into research.

Source: Layton, Alison, E. Anne Eady, Maggie Peat, Heather Whitehouse, Nick Levell, Matthew Ridd, Fiona Cowdell, Mahenda Patel, Stephen Andrews, Christine Oxnard, Mark Fenton & Lester Firkins. 2015. 'Identifying acne treatment uncertainties via a James Lind Alliance Priority-setting Partnership'. BMJ Open 5(7). doi:10.1136/bmjopen-2015-008085 (22).

**Box 9: Involvement of healthcare staff in an action plan to improve the Trust's research capacity**

**An action research approach for developing research and innovation in nursing and midwifery practice**

What was the research project or initiative about?
This study aimed to develop an infrastructure for research capacity building within one (unnamed) National Health Service Foundation Trust by using an action research methodology. Action research involves studying research participants in their natural settings with the purpose of informing change. In this study, nurses and midwifes joined a project steering committee through which they were involved in research design and implementation regarding an action plan to improve the Trust's research capacity.

How were NHS staff involved?
The key nursing, midwifery and managerial staff who were included on the project steering committee worked together with the rest of the committee to make all subsequent decisions within the process of developing the action plan. The group considered the findings of the initial research exercise (the interviews with purposively sampled nursing, midwifery and managerial staff) and developed a range of structures and processes which were considered necessary to enable the Trust to move forward in developing capacity and capability for research. Funding was obtained to enable the NHS Foundation Trust to support the process.

What enabled engagement?
The paper identified that a key facilitator of staff engagement would be to identify three groups of talent within the organisation. These were: the innovators among the staff, many of whom would be working at the grass-roots level; the mentors, who could work with individuals or groups to help them develop; and the champions who would effectively sell the idea of the development process.

The paper found that this process could be further enabled by providing support and training to the aforementioned groups of talent. The mentors and champions would be offered the opportunity to complete a short training programme in coaching to prepare them for their role. The innovators would be offered support from the academic members of the team to develop their proposals and the mentors would offer coaching to maintain momentum. The matrons within the Trust were identified as the individuals most likely to know where the best ideas could be found within their areas and were thus tasked with using their informal mechanisms to encourage individuals with ideas to put them forward.

What were the challenges?
Time constraints were the biggest obstacle to implementing the participants' wealth of ideas for research innovation. All participants stated that demands on their time were such that they could not allow taking on the work involved in research or service development projects.

Research was regarded as a specialist activity, and in some instances it was seen as the domain of the medical staff.

Impacts
The paper does not discuss the impact of staff engagement on the research process, though by extension of the above point, healthcare staff with knowledge of the Trust's existing research capacity-building structures and processes can be assumed to be well placed for designing and implementing research projects.

**Source:** Moore Jenny, Kenda Crozier & Katharine Kite. 2012. 'An action research approach for developing research and innovation in nursing and midwifery practice: Building research capacity in one NHS foundation Trust'. *Nurse Education Today* 32(1): 39–45. doi:10.1016/j. nedt.2011.01.014 (13).

# Appendix B. Study design and methods

## Study design

To address the questions set out above we conducted a review of relevant literature alongside interviews with a range of individuals with expertise in the field. Our literature review approach followed the principles of REA (48). This approach is consistent with the principles underlying systematic review methodology (based on clearly defined research questions, systematic and replicable search strategies, and explicit inclusion and exclusion criteria), but makes some allowances for the rapid delivery of information as required, by restricting the scope and coverage of the review to focus on the most relevant literature.

The ultimate aim of the review was to provide practical insights to help inform THIS Institute's evolving engagement strategy. For this reason, the review was inclusive with respect to article type; we did not exclude articles based on methodology and we undertook only a limited assessment of the quality of the articles reviewed (noting limitations of the studies reviewed and considering these in the synthesis of review findings). We sought to undertake a narrative synthesis based on the research questions addressed through the REA, and incorporated insights based on interview findings. We also sought to provide real-world examples of how different approaches to the engagement of NHS staff with research have been implemented, through the presentation of case studies sourced from the literature.

## Rapid evidence assessment

### Search strategy

An initial trial of search terms was conducted by two researchers to refine search terms and scope based on the quantity of relevant literature identified. This was an iterative process whereby searches were run and the results obtained were reviewed to ensure relevant articles were being captured without superfluous material being included. After several rounds of testing, a final set of search terms was established and then applied. The refined search terms were applied to the PubMed and Scopus databases on 4 April 2018, with no date restrictions applied. The search terms used are presented in Table 10.

**Table 10: Search terms for Rapid Evidence Assessment – review articles**

| PubMed<br>4 April 2018<br>English |
|---|
| ((UK[title/abstract] OR "united kingdom"[title/abstract] OR England[title/abstract] OR wales[title/abstract] OR Scotland[title/abstract] OR "northern Ireland"[title/abstract] OR "Great Britain"[title/abstract] OR United Kingdom[MeSH]) AND Health Services[MeSH]<br>OR<br>"national health service"[title/abstract] OR NHS[title/abstract]))<br>AND |
| Health personnel[MeSH] OR staff[title/abstract] OR professional*[title/abstract] OR clinician*[title/abstract] OR worker*[title/abstract] OR doctor*[title/abstract] OR nurse*[title/abstract] OR consultant*[title/abstract] OR general practitioner*[title/abstract] OR GP[title/abstract] OR Midwife[title/abstract] OR Midwives[title/abstract]<br>AND |
| (((Research[MeSH] OR Research*[title] OR Study[title] OR studies[title] OR "systematic review*"[title] OR "evidence synthesis*"[title] OR evaluat*[title] OR trial[title] OR "randomised controlled trial"[title] OR "randomized controlled trial"[title] OR RCT[title])<br>AND |
| (participat*[title] OR involve*[title] OR engage*[title] OR contribut*[title] OR design*[title] OR codesign*[title] OR co-design*[title] OR articulat*[title] OR specification*[title] OR priorit*[title] OR conduct*[title] OR develop*[title] OR co-produc*[title] OR "idea generation"[title] OR implement*[title] OR activit*[title] OR collab*[title] OR partner*[title]))<br>OR<br>"citizen science" OR "citizen-science" OR (crowd[title/abstract] AND source[title/abstract]) OR crowdsource* |
| Scopus<br>4 April 2018<br>English |
| ( ( TITLE-ABS ( uk OR "united kingdom" OR england OR wales OR scotland OR "northern Ireland" OR "Great Britain" ) AND TITLE-ABS ( "health services" ) ) OR ( TITLE-ABS ( "national health service" OR nhs ) ) )<br>AND |
| ( TITLE-ABS ( "Health personnel" OR staff OR professional* OR clinician* OR worker* OR doctor* OR nurse* OR consultant* OR "general practitioner*" OR gp OR midwife OR midwives ) )<br>AND |
| ((TITLE (research* OR study OR studies OR review* OR "evidence synthesis" OR evaluat* OR trial OR "randomised controlled trial" OR "randomized controlled trial" OR RCT) )<br>AND |
| ( TITLE ( research* OR study OR studies OR "systematic review*" OR "evidence synthesis*" OR evaluat* OR "randomized controlled trial" OR trial OR RCT OR "randomised controlled trial" ) ) AND ( TITLE ( participa* OR involve* OR engage* OR contribut* OR design* OR codesign* OR co-design* OR articulat* OR specification* OR priorit* OR conduct* OR develop* OR co-produc* OR "idea generation" OR implement* OR activit* OR partner* ) )<br>OR<br>TITLE-ABS ("citizen science" OR "citizen-science" OR "crowd source" OR crowdsource*) |

In addition to academic literature, we also searched for grey literature, using Google searches for terms relating to NHS staff engagement with or involvement in research between 5 April 2018 and 13 June 2017.

## Study selection

Records identified by the searches were assessed for inclusion by screening titles and abstracts against a set of inclusion and exclusion criteria (Section A.4.). At this stage, studies were deliberately retained if there was

any uncertainty as to their relevance. Screening was conducted by one researcher in the first instance and cases of uncertainty were set aside and screened by a second reviewer. Full-text screening of potentially eligible articles was undertaken as part of the data extraction stage (see below), during which studies were excluded against the same inclusion and exclusion criteria, based on the more detailed information available through full-text review.

In addition, a "snowballing" approach was used to identify additional studies for screening and potential inclusion. In this approach, the reference lists of relevant studies were reviewed for further potentially relevant studies, which were then screened in the same way.

## Inclusion and exclusion criteria

Due to the large number of articles (155) identified as potentially relevant during the initial title and abstract screening phase, and additional date restriction was added, limiting inclusion to articles published from 2000 onwards. For articles that described NHS staff involvement in research but where this was not the primary focus (98 articles), a subset were selected for inclusion based on relevance to THIS Institute's particular areas of interest. This helped ensure clear focus for the review and the coverage of diverse types of research papers. This is described in Table 11.

**Table 11: Inclusion and exclusion criteria for Round 1 screening**

| Title and abstract screening | Inclusion | Exclusion |
|---|---|---|
| Topic | Articles which:<br>• Focus on methods or approaches the engagement of NHS staff in the prioritisation, design or conduct of research studies or evaluations of healthcare or improvement interventions;<br>• Focus on the challenges and enablers to NHS staff engagement;<br>• Provide insights on the impact of patient or public engagement, including insights on advantages and disadvantages;<br>• Provide insights on the evaluation of patient or public engagement. | Articles which:<br>• Focus on formal schemes such as research fellowship programmes;<br>• Focus on the involvement of NHS staff as participants in research, but where they are not actively involved in its prioritisation, design or conduct (e.g. where they are involved as interviewees or observed through non-participant observation);<br>• Focus on the involvement of NHS staff solely in delivery of an intervention to be evaluated, but where they are not involved in its evaluation;<br>• Focus on NHS staff involvement in service or intervention development without an evaluative component;<br>• Focus on NHS staff involvement in the prioritisation of service changes/developments (as distinct from research prioritisation). |
| Language | English | Any language other than English |
| Country setting | UK | None |
| Document type | • Any type of publication (including commentaries, editorials or opinion pieces) where the assertions are based on empirical evidence or practical experience. | • Commentaries, editorials or opinion pieces without direct reference to empirical evidence or practical experience;<br>• Conference abstracts. |
| Date of publication | • Round 1: No restriction<br>• Round 2: From 2000 | • Round 1: No restriction<br>• Round 2: Before 2000 |

Articles were not excluded on the basis of quality and no formal assessment of quality was undertaken as part of the review. However, the included studies reported on a range of limitations which were considered as part of the review process.

### Extraction and synthesis

During this stage, data were extracted from studies identified as eligible using an Excel template and Endnote (version 8). Guided by our research questions, data were extracted on the following: article type; group discussed in the context of NHS staff engagement with research; study type (including summary study aims, objectives, design, headline findings); stage of the research process at which NHS staff engagement took place; how NHS staff engaged and what they did; motivations for engagement; impacts of engagement on the research/study/evaluation; enablers/ facilitators of engagement; challenges/barriers to engagement; how engagement of NHS staff could be improved in the future; evaluating NHS staff engagement in research; and limitations of the study.

Data extraction was undertaken by four researchers (SD, AC, RP and AB). We synthesised the evidence available in relation to each of our research questions and identified additional themes arising from the literature that we considered potentially important in the context of informing the development of strategy for THIS.

### Overview of identified literature

Our searches of the academic literature identified 1,725 articles, reports and commentaries (1706 identified through database searches, and a further 19 from other sources, including recommendations, snowballing and a grey literature search). Initially, a total of 155 articles were identified as potentially relevant on the basis of title

and abstract screening using the inclusion and exclusion criteria set out above. These articles fell into two categories: "core articles" describing research on the topic of NHS staff engagement with research (57 articles), and "case" articles describing NHS staff involvement in the context of a particular project or organisation (98 articles).

In light of the extent of the relevant literature and available resources and given the timescale allocated for the review, the decision was taken to limit the number of articles included for full-text review based on restricting the date of publication to those articles published from 2000 onwards. On this basis, 35 core articles were included in the review. In addition, 94 of the 98 "case" articles identified remained for consideration. Abstracts of these articles were reviewed to assess relevance with respect to THIS Institute's particular areas of interest. The 12 most relevant articles were selected for inclusion. In total, 35 "core" articles and 12 "case" articles were included based on the review of academic literature.

## Interviews with experts on NHS staff engagement with research

In order to add depth and nuance to the findings from the literature review, semi-structured telephone interviews were undertaken with a range of experts identified via the professional networks of those commissioning and conducting the review. Interviews lasted between 30 and 45 minutes and took the form of a guided conversation using a semi-structured interview guide.

The topics covered included:

- Key motivations and incentives for NHS staff engagement with research (and associated practical means through which these motivations and incentives can be deployed);

- Views on how to raise awareness about opportunities for involvement;
    - Experience and knowledge of diverse methods and approaches to involvement;
    - Views on key enablers and challenges (including ways of overcoming challenges);
    - Any examples of particularly relevant or successful programmes or initiatives;
    - Views on how THIS Institute or other organisations might take their engagement strategy forward.

With the participant's consent, interviews were audio–recorded for the purpose of writing up accurate notes on the interview. Interviews were analysed thematically according to the questions explored by the researcher conducting the interview. Findings were discussed between team members in terms of their relationship to insights from the literature review.