

## Implementing a perioperative care of older people undergoing surgery (POPS) service

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## QUALITATIVE PAPER

# Implementing a perioperative care of older people undergoing surgery (POPS) service: findings from a multi-site qualitative implementation study

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## Abstract

**Background:** The Perioperative care for Older People undergoing Surgery (POPS) service model is increasingly being implemented across care providers in the English and Welsh National Health Services.

**Objective:** The study aimed to produce evidence regarding clinical leaders' activities to implement POPS across different service contexts and to produce generalisable recommendations for future implementation.

**Methods:** A qualitative interview study was undertaken across six National Health Services hospitals with established POPS services. Interview participants were recruited on the basis of their direct involvement in the implementation and leadership of the service. Data collection involved semi-structured interviews with 26 people carried out between November 2022 and May 2023.

**Results:** The implementation of POPS is often hampered by a lack of managerial and financial support, and apprehension amongst surgeons and anaesthetist about new ways of working. POPS leaders address these through five interconnected activities, each targeted at a combination of implementation factors. (i) Securing management and financial support. (ii) Professional engagement. (iii) Evidence building as a resource for demonstrating the clinical and operational benefits of POPS. (iv) Communication and engagement activities to promote and legitimise POPS to stakeholder groups. (v) Designated and distributed leadership to promote and coordinate implementation activities and to spread the service to new pathways.

**Conclusions:** Through a combination of activities POPS can be effectively implemented across different organisational contexts. Some aspects of these activities can be guided by shared resources and learning across sites, but others require adaption to local contextual barriers and drivers.

**Keywords:** implementations, implementing, older people, perioperative care of older people undergoing surgery, qualitative research

## Key Points

- The implementation of Perioperative care for Older People undergoing Surgery (POPS) is an incremental social process.
- Building clinical and operational evidence is key to demonstrating the value of POPS.
- Communication and engagement strategies are integral to securing professional and managerial buy-in.
- Professional and managerial buy-in enables the growth of POPS.
- Both designated and distributed leadership plays a role in implementing POPS.

## Introduction

The number of older people undergoing surgery is increasing [1]. In addition to surgical pathology, older people present with age-related physiological deterioration, multimorbidity, frailty and cognitive decline which are associated with postoperative complications, functional deterioration and longer length of stay. Surgical pre-assessment has traditionally focused on a person's physical fitness for surgery but not on this broader range of health-related factors. This has prompted the development of a model of care, the Perioperative care for Older People undergoing Surgery (POPS), which is now being implemented across the English and Welsh National Health Services (NHS) [2–4]. POPS is a multi-disciplinary service, usually led by a consultant geriatrician that uses a comprehensive geriatric assessment (CGA) throughout the surgical pathway. CGA is a multidimensional holistic assessment of an older person's medical, physiological, functional and social circumstances to formulate a personal plan of evidence-based interventions that, in the context of POPS, aims to optimise a patient's health across the surgical pathway [2, 5, 6]. Preoperatively, elective patients are assessed holistically, then provided with medical and functional support to optimise their readiness for surgery. Postoperatively, shared decision-making with geriatricians and surgical teams informs rehabilitation, facilitates safe and timely discharge, optimise long-term outcomes and reduces the risk of unplanned readmission.

Evidence shows that the POPS model can be effectively introduced in hospitals with wide-ranging characteristics and across different surgical pathways, by adapting the CGA-based service model to local contextual factors, such as, the local population, workforce size and shape and other resource considerations. Research on the implementation of POPS within one hospital shows how a sequence of targeted activities are involved in securing relevant resources and senior manager buy-in; addressing staff apprehensions about the negative impact on established practices; promoting the evidence and common-sense utility of the service; and achieving buy-in from professional groups for multi-disciplinary work [3]. The study reported in this paper builds on this research to produce further evidence about the strategies and activities used by clinical leaders to implement POPS across different service contexts, with the aim of producing recommendations for future implementation. Drawing on Normalisation Process Theory (NPT) [7] the paper presents the findings of a multi-site qualitative study of the spread and scale-up of POPS and offers a preliminary implementation framework for subsequent empirical testing.

## The study

### Conceptual approach

Research shows that the introduction of new healthcare interventions and technologies can be difficult. Various factors influence implementation processes related, for example,

to the quality and relevance of the innovation, the capabilities of the people involved in introducing change, and local contextual factors [8]. Research also shows that a range of targeted activities can support implementation, such as iteratively adapting interventions to local context, securing stakeholder commitment, using incentives and transforming local infrastructures [9]. Research on the spread and adoption of innovations further suggests that more attention is needed to the work of 'adopters' in repackaging the innovation, adapting innovation to local context and dealing with contextual barriers [10].

Focusing on the activities of clinical leaders to implement POPS across different service contexts, this study draws upon NPT. NPT is distinct amongst implementation theories because of its focus on the 'work' of social actors to make sense of, give meaning to and become committed to new ways of working [7]. It analyses how innovations become normalised through four linked constructs: 'coherence'—the work of making sense of an innovation; 'cognitive participation'—the work of engaging with an innovation; 'collective action'—the combined work of integrating new practices into existing skills, relationships and contexts; and 'reflexive monitoring'—the work of appraising and adapting new practices (See Table 1). In this study, these constructs are used with specific reference to the work of POPS leaders to facilitate coherence, cognitive participant, collective action and reflective monitoring amongst wider stakeholders in surgical services.

### Study design and governance

A qualitative case study approach was followed. Case study research involves focused description and analysis of a bounded social phenomenon, e.g. the implementation of POPS within NHS hospitals. Case study research allows for detailed analysis within a given case and comparative analysis between cases allowing for further empirical and propositional generalisation [11]. The study was reviewed by the University of Birmingham Research Governance service and was given a favourable ethical opinion in September 2022.

### Study site and participants

A purposive sampling strategy was followed for the selection of both organisational cases and individual participants. A desk review estimated that there are between 45 and 50 POPS services across the English NHS, albeit with variations in longevity, the number and types of surgical pathways served, and weighting towards pre- or post-surgical care. The primary basis of organisational sampling was that the POPS services was established and had been in operation for at least 2 years as either an 'innovator' (first of type) or 'early adopter' site. This is because the extended length of operation would afford greater empirical insight into processes of implementation, which in accordance with the wider implementation literature, is understood as an ongoing process rather than a

**Table 1.** Summary and application of NPT

NPT Domain	Description	Application to POPS leadership
Coherence	The <i>sense-making work</i> that people do individually and collectively when faced with new practices	How do leaders understand and help others understand the value and benefits of POPS as a new model of care?
Cognitive Participation	The relational work to build and sustain communities around new practices	How do leaders initiate, enrol and activate people into POPS?
Collective Action	The operational work of enacting new practices	How do leaders support others to integrate POPS into existing practices and contexts?
Reflexive Monitoring	The appraisal work of assessing and understanding how new practices affect services	How do leaders appraise their activities and support others to appraise the benefits of POPS?

Source: [7].

**Table 2.** Summary of participating hospital sites

Site	Type	Profile	Pop. Served
1	Tertiary Specialist & Acute Hospital	>1,500 beds >23,000 staff	>2million
2	Tertiary Specialist & Acute Hospital	>600 beds >13,000 staff	>1million
3	District General Hospital	>900 beds >6,500 staff	>600,000
4	Tertiary Specialist & Acute Hospital	>1,000 beds >14,000 staff	>450,000
5	District General Hospital	>700 beds >5,000 staff	>400,000
6	District General Hospital	>450 beds >3,000 staff	>500,000

**Table 3.** Summary of participants

Site	Participants	Participant Profile
1	7	Consultant Geriatrician (3), Surgeon (3), Anaesthetist (1)
2	3	Consultant Geriatrician, Nurse (2)
3	4	Consultant Geriatrician (2), Surgeon, Nurse, Trainee Geriatrician
4	3	Consultant Geriatrician (2), Trainee Geriatrician
5	6	Consultant Geriatrician, Anaesthetist (3), Service Manager, Surgeon
6	3	Consultant Geriatrician, Nurse (2)
Total	26	Consultant Geriatrician (10), Surgeon (5), Nurse (4), Trainees (2), Anaesthetist (4), Manager (1)

one-off event. Site selection also took into account variations in terms of location and size of hospital. Based on these considerations, six POPS services were approached in writing through established professional networks and agreed to take part (Table 2).

Within each site, individual participants were sampled on the basis of their direct involvement in the implementation of the POPS service (See Table 2). In the first instance, the designated POPS lead for each site was invited to take part in the study. Each was then invited to identify other key people directly involved in implementing and delivering the POPS services. See Table 3 for summary of study participants at each site.

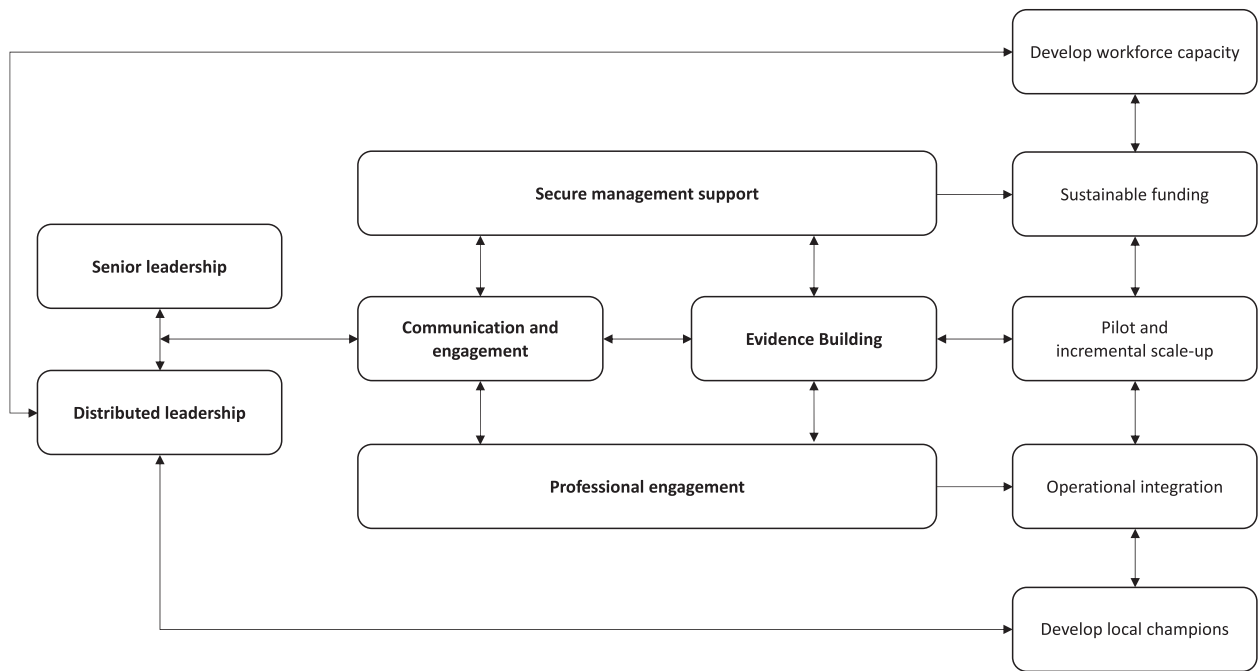
### Data collection

Data collection involved semi-structured interviews with 26 people over a period of 7 months between November 2022 and May 2023. An interview topic guide was developed in consultation with an advisory group and with reference to the NPT constructs, comprising the following topics: biographical information; understanding and perceptions

of POPS; the value and benefits of POPS; learning about POPS; putting POPS into practice; and sustaining and improving POPS. Questions investigated the perceived barriers and drivers to implementation, and the work undertaken to address these challenges. Interviews were carried out remotely using video-conferencing software and recorded with the consent of all participants. On average interviews lasted 50 min. Interviews were carried out by JW, an experienced qualitative researcher with limited prior understanding of POPS, which was seen as fostering an enquiring disposition towards POPS services.

### Data analysis

Data analysis followed the principles of abduction reasoning [12]. This involves an iterative dialogue whereby preliminary lines of data interpretation are tested with reference to existing theory to confirm to or extend explanatory reasoning. In this study, codes and themes interpreted from the data were related back to the theoretical constructs of NPT to inform explanatory reasoning. In practice, this involved close reading of interview transcripts by JW followed by systematic



case, POPS leads described needing to demonstrate both the clinical value of POPS and, more significantly, the operational and financial benefits of reducing length of stay, expediting discharge and demonstrating financial savings. Aligning with external funding programmes, such as best practice tariffs, was an additional feature of business case development.

*The one thing you have to show is that you are cost neutral or you can potentially save money. . . . It has to be a new business case, you know you so no matter where you are, (2.1).*

*when we're talking to directors or managers. . . [we] emphasise how we improve the flow of the patient through the hospital currently because of other pressures. . . improve, increase, reduce the time it takes for a patient to be more medically stable ready for discharge. (3.1).*

For larger hospitals with more extensive geriatric services, business case development involved developing medical training and fellowship positions to plan for the longer-term sustainability of staffing. POPS leads also reported logistical challenges in accessing and analysing routine service data and drafting business cases due to lack of experience, and so learning from peer support networks was reported as helpful. Securing management buy-in and, in turn, longer-term funding made possible the recruitment of additional posts to deliver and spread POPS, which resulted in improved organisational and clinical performance, and increased the likelihood of additional funding to spread POPS to other pathways:

*once we primed the money from our side, (POPS Lead) then managed to use that to find more money to support (geriatricians') role and sort the ANP. And also another consultant. . . So, it kind of snowballed (5.3).*

## Professional engagement

POPS lead reported varying degrees of professional interest in the POPS service. Across all sites the initial introduction of POPS was experienced with some degree of apprehension amongst surgeons and anaesthetists. This related to the perceived impact on established ways of working and the potential challenge to surgical and anaesthetist decision-making; e.g. geriatricians making recommendations that might delay surgery. One surgeon reflected on their initial hesitancy:

*. . . you know that threat. And we all know about this in psychology in a bit. That sort of threats and disruption to that was a concern. But I was please to say that the evidence and the practice of that has worked out very well. (4.4).*

In some hospitals, surgical hesitation was coupled with a more general sense of change fatigue and worries about untested innovations; this was especially the case in smaller district hospitals:

*So that kind of resentment and animosity around the POPS service was there. . . it was more the sort of barriers of is this another service that's gonna set be set up and then we're gonna see it disappear (3.5).*

Over time, such hesitancy attenuated, with surgical teams, in particular, actively requesting the introduction of a POPS

service. The piloting phase was reported as demonstrating the value of POPS, especially where it could demonstrably improve performance for external audits or registries, such as the National Emergency Laparoscopy Audit (NELA). As such, it seemed that the take up of POPS was more strongly supported in surgical pathways where such audits were used to guide surgical decision-making.

*We've made massive jumps forward in the NELA outcomes that we've had in the last few years. We've met best practise tariffs, one of the main reasons for that is that we now have a POPS service. . . [it] has halved the length of stay for the over 60 group of patients who are having emergency surgery (3.5).*

POPS leads talked of three complementary engagement activities as helping to secure the support of surgeons and anaesthetists. The first involved awareness raising and providing relevant information about what POPS involved and how it could integrate into surgical pathways without significant disruption. The second involved demonstrating the value of POPS through piloting the service and building evidence of positive changes in surgical care. For surgeons this involved both first-hand evidence (from their own experiences) in terms of more holistic patient assessments, ready access to medical services and improved flow of patients, and more rigorous clinical evidence (from evaluations and audits) in terms of reduced length of stay and improved patient outcomes. The third activity was described as an involving 'softer' inter-personal strategies for allaying concerns, building collaborative relationships and, over time, encouraging other professionals to champion the service. This includes building constructive relationships with surgical teams, fostering surgical ownership of the services and providing educational support to surgical trainees on aspects of medical care. POPS leaders spoke of the importance of building constructive and trusting relationships and not imposing change upon surgeons.

*My approach had been initially was to show my value, show how I could be helpful rather than trying to push my agenda on them straight away. (4.2).*

*that's how we got our foot in the door, and once you get recognized and the respect is own, you find that it's snowballs from there, but I always think it's a key thing that it's so obvious it does need to be said. . . when we showcase our skills on the wards that's that really helped. (1.1).*

## Evidence building

POPS leaders described developing and using robust evidence as a key underpinning strategy for engaging managers and clinicians. Without robust evidence, it was difficult to scale up the service from one pilot pathway to other surgical specialities. Three complementary approaches to evidence building were reported. First, the development of an external clinical research evidence base substantiated the rationale for the service and demonstrated its clinical effectiveness. This included, for example, underpinning research on the effectiveness of the CGA in surgical pathways, systematic reviews on the effectiveness of similar interventions and a growing body of national evidence of the clinical effectiveness of



POPS specifically. Second, it involved the development of local service-level data related to the operational performance of POPS, i.e. real-world effectiveness in the specific setting in which adoption was sought. Third, it involved the development of 'know-how': evidence related to the management of POPS services, including the creation of practical guides, logic models (that describe service input, processes and outputs), measurement lists and other resources.

*you know there's enough national evidence now to say, you know what, this is good. This is good not only for patients, but it's good for staff, and it's good for process, and ultimately you save money (2.1).*

*we've been doing our own QI work. And when we started to then generate our own data, which seemed to be working, which was used for what's good enough really to have a business case built around (1.1).*

*we're still working on some of the projects like the routine frailty score, and it's something that we're still really trying to drive forward. And there's still quite a lot of work to be done there, I think (3.3).*

One noteworthy variation across the POPS sites was that larger, more research-intensive hospitals tended to have more ready access to data analytics and quality improvement support to facilitate evidence building, whilst smaller hospitals needed to draw on data reported by these other sites to support the initial steps in local evidence building.

## Communication and engagement

In concert with evidence building, POPS leaders talked about the importance of their communication and engagement activities in promoting and legitimising POPS amongst multiple audiences. It was reported that the profile of POPS had been raised through international and national conferences and its adoption in service guidance and specialist training [13]. This provided POPS leads with an external reference point when introducing POPS within their local services, especially where reference could be made to other hospital sites. A key strategy was to create a sense of competitive pressure between organisations and to refer to national clinical audits (registries) that appear to demonstrate the benefits of POPS.

*Using opportunities like NELA (National Emergency Laparotomy Audit) to feed back our data, and then everyone can see that you're doing it well, and then you can kind of get the message out there. (1.2).*

At the local level, communication and engagement activities were reported as essential to securing professional and managerial buy-in and, in turn, the expansion of POPS to new surgical pathways and the acquisition of additional resources. These activities largely focused on articulating the clinical and organisational need for and benefits of POPS, such as providing evidence of the challenges faced by older people undergoing surgery and showing how the POPS model could help address these challenges. Presentations made by local POPS leaders utilised a combination of national and local data sources on clinical outcomes and length of stay.

Clinical evidence seemed key to securing clinical engagement, whilst the use of operational and resource-related data, including national audit data, was key to gaining management support. A noteworthy feature of the communication strategy was the combination of consistent branding and messaging together with the targeting of information to local stakeholders through the accumulation of new evidence and the expansion of the POPS service to more surgical pathways. In terms of consistent messaging, service leaders accessed and shared common resources for promoting POPS, including slide-decks, presentation and reports.

*They do recognise the logo. You know we've tried anything that we put up on the wards in relation to projects and things like that. We try and brand ourselves. . you know how we're contactable. It's you know it's there so that people know that it's us, (3.3).*

Echoing the soft skills described above, POPS leads often talked about using charm and personal persuasion as part of their communication repertoire:

*trying to be personable in the conversations that you have with people. Um, and not being too dogmatic in your approach, being open to listening to different points of view around this, reflecting on that, but then trying to be very clear in what your message is following that. (1.1).*

## Leadership and team building

The implementation of POPS across all sites required the concerted and sustained energy of senior geriatricians to lead and deliver the POPS services. As noted above, addressing the lack of these specialists was a key implementation priority. However, the process of implementation required particular forms of designated and, in time, distributed to leadership [14] to ensure that the above activities were coordinated and continuously reviewed as an ongoing process of change. Designated leadership was described as committed clinical leadership, in most cases a consultant in geriatric medicine, with developed understanding of POPS services. These people described themselves as translating research and guidance into a local service specification, devising the local POPS strategy and pathway, leading the development of the business case to secure management buy-in, and advocating for the service within their medical discipline and across anaesthetic and surgical disciplines.

*I have spearheaded most of it in terms of data collection, creating the presentations, writing the feasibility proposal, and things like that. . . definitely over the last 2 or 3 years I've worked harder than I ever did as a registrar. I think you need to have that enthusiasm for what you're doing, and I think, unfortunately (4.2).*

As POPS services secured management support and became established across multiple surgical pathways, other actors contributed to the distributed or shared leadership of POPS implementation and operation. Where additional resources were made available by management, this involved the appointment of new geriatricians, but in most sites, it involved engaging other clinical groups to support the

operational leadership of POPS. In Site Five the expansion of POPS involved the proactive recruitment of anaesthetists to support aspects of assessment and optimisation, and in Sites Two and Six POPS was described as 'nurse-led' service given the difficulties in recruiting additional geriatricians. For the larger tertiary specialist hospitals, the expansion of POPS involved engaging trainee doctors in leadership activities to support different aspects of implementation, e.g. coordinating assessment clinics, data collection and communication and engagement.

*The team has slowly grown over the last 2 years, and [name] joined us in November last year as a physician associate and since then we've also gained a ... healthcare support work, who's been seconded into that role. (3.1).*

POPS leaders described how, over time, and with the incremental spread of POPS to additional surgical pathways, the balance of leadership roles and relationships changed, with less emphasis on a small group of geriatricians and more direct involvement of other professionals and managers in strategic planning and professional engagement.

## Discussion

Our study investigated the strategies and activities for implementing the POPS service across six organisational sites with the aim of identifying generalisable recommendations. The study extends previous research that shows how a series of targets activities were required to implement POPS within one hospital setting, including securing management buy-in and addressing clinical apprehension in order to secure professional engagement [3]. The study reported here shows that across six hospital sites, the predominant barriers to implementation related to, first and foremost, the funding for and availability of geriatricians to implement and operationalise the POPS service and, second, the extent to which surgeons and anaesthetists engaged with the service to enable the operational integration of POPS into surgical pathways. The primary activities for addressing these barriers centred on securing management support to secure additional funding, and also engaging professional communities to secure their acceptance and operational involvement. Underpinning these primary activities, POPS leader needed to proactively build the evidence for the clinical and operational effectiveness of POPS, and develop robust and effective communication strategies, which required sustained designated and distributed leadership.

Across the six sites, the POPS service was introduced incrementally, often starting with one elective surgical pathway before being introduced into others. These initial surgical pathways seemed more accepting of POPS given emerging evidence of its ability to improve performance against external audits, e.g. NELA, and improve targeted organisational performance, thereby highlighting the importance of outer contextual factors [8]. The incremental spread process

also highlights the on-going work of leaders in building the evidence for POPS and undertaking parallel communication and engagement strategies with professional and managerial stakeholders. This facilitated the expansion of POPS to include additional pathways by the communication of additional and locally relevant evidence, and the recruitment of surgical or anaesthetic champions into distributed leadership roles. It is important not to see these implementation activities as operating independently or in a linear way. Rather it was the combination of leadership, communication and evidence building that supported professional and managerial engagement, which provided important feedback into communication, evidence building and leadership development (see Figure 1). In effect, implementation unfolded through a virtuous cycle or snowball effect that starts relatively slowly in one service area, but as evidence mounts and engagement grows the service become implemented across multiple areas.

Drawing on NPT, these linked activities can be interpreted as supporting the normalisation of POPS [7]. In terms of *coherence*, POPS leaders' communication methods and use of evidence supported local stakeholders to see POPS as distinctive and value-adding. In particular, professional engagement and distributed forms of leadership allow clinical teams across different surgical pathways to see specific forms of value from POPS, whilst managers appreciate the business case for operational and financial improvements. In terms of *cognitive participation*, the building and communication of evidence related to clinical outcomes and service performance was key to legitimising POPS, whilst distributed forms of leadership across multiple surgical pathways provide the foundations for incrementally spreading and implementing POPS. It is also the case the *collective engagement* with POPS required local adaption and modification so that elements of pre-surgical assessment, post-surgical ward management and shared decision-making were effectively integrated into existing working patterns and care pathways. In terms of *reflexive monitoring*, the study found that evidence building, especially the use of routine service data, provided both important learning about the impact of POPS and that efforts to systematically collect and analysis data through audit or improvement activities can further support communal specification and implementation. The application of NPT to the implementation of POPS offers a developed explanation for how the identified strategies and activities combined to support normalisation. The case of POPS contributes to implementation research by providing further evidence on the strategic role of leaders in implementing change [9], especially the ways underpinning activities for communication and evidence building contributed to more direct activities for managerial and professional engagement, and how scale-up and spread of innovations evolves through a combination of designated and distributed leadership [14, 15]. As such, the heuristic model developed from the study might have application to other spread and adoption of other innovations.



## Limitations and next steps

The study reported in this paper draws from a relatively small sample of representatives from only six NHS hospitals providing POPS services. In particular, a relatively small number of managers, surgeons and anaesthetists participated in the study, but this could be considered a finding in itself, as in many sites it seemed that these groups were not viewed as directly involved in the proactive implementation of POPS rather they were wider stakeholders. It is also worth acknowledging that there is likely to be a degree of recall bias in that participants were asked to reflect upon activities that, in some cases, took place over 10 years earlier. It is also important to investigate organisations where the POPS service has not been taken up to consider the barriers that inhibit implementation. These limitations are the foundations for future work.

## Conclusions

The spread and implementation of the POPS service is growing at pace across the English and Welsh NHS. Learning from the experiences of early adopters, this paper describes the key strategic activities through which this service model can be successfully implemented and normalised into routine practice. It recommends in particular the importance of both designated and distributed leadership in team building and securing commitment to change, the combination of evidence building and effective communication strategies to persuade stakeholders of the benefits of POPS and, in particular, to secure professional engagement and management buy-in through the utilisation of clinical evidence and the development of a robust business case. The study also recommends an incremental implementation process where the case for POPS is developed and proven across a limited number of pathways before being scaled-up.

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**Data Availability:** Study data is available on request from the lead author.

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