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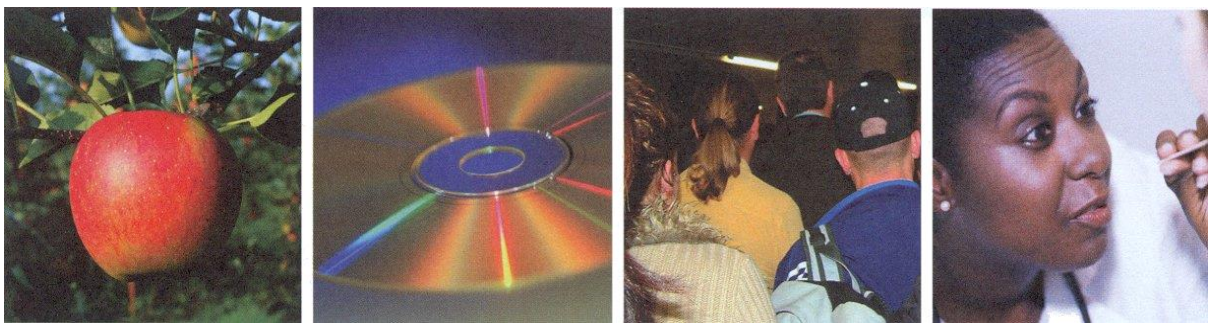
Evaluation of West Kent Clinical Commissioning Group Clinical Microsystems Programme for General Practice

Patricia Wilson, Professor of Primary and Community Care and Vanessa Abrahamson, Research Associate, Centre for Health Service Studies, University of Kent

October 2018, updated March 2019

Commissioned by NHS West Kent Clinical Commissioning Group



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Executive summary

This evaluation was commissioned by West Kent Clinical Commissioning Group (CCG) who have invested in training senior managers in the role of coach to facilitate implementation of the clinical microsystems programme developed by the Dartmouth Institute, USA (Nelson et al., 2008). The approach shows promise in improving quality within the NHS (Williams, Dickinson, Robinson, & Allen, 2009) and accords with new ways of working identified in the General Practice Forward View (NHS England, 2016). To-date, nearly thirty general practices in West Kent have been involved in the programme carrying out a range of quality improvement programmes (Arnold & Kankam, 2017).

Aims

This evaluation aimed to capture the impact of the clinical microsystems programme in West Kent general practice. It intended to synthesise a broad range of perspectives from all those involved in the programme, including practices who withdrew or declined the offer of the programme. It asked:

1) How embedded is the use of the Clinical Microsystems methodology and the West Kent toolkit?
2) What are stakeholder perceptions of how the tools equip them to meet future challenges?
3) How did the reimbursement package trigger adoption of the programme?
4) Is the reimbursement package required for sustained adoption?

Method

The evaluation was conducted in two stages and was underpinned by implementation science methodology (May et al., 2007). The first stage involved a review of all projects carried out in West Kent using existing data collected by the CCG. A typology of completed projects was developed. The second stage involved an in-depth contextual evaluation. Ten coaches and one senior CCG manager were interviewed. Ten general practices and sixteen staff participated; this included six interviews, two dyad interviews and one focus group. Interviews were carried out between June and September 2018.

Findings

The majority of projects were *process driven* activities related to administrative systems, patient flow and communication. Projects directly related to *health outputs* were much fewer, and usually related to Quality Outcomes Framework targets (NICE, 2018). Practices regarded the programme as a valuable opportunity to address process driven issues or to develop a new patient-focused initiative. Coaches viewed the approach as a way of supporting general practices to build an ethos of continuous quality

improvement, develop a culture of reflection and facilitate practices to take control of their own improvement.

There were certain elements that facilitated practices to engage: feeling in control of the agenda; receiving enhanced service payment; having at least one senior staff member who championed the approach; and a good relationship with the coach.

With regards the process, criticisms were that there was too much theory; the process lacked flexibility; and it took too long. This was countered by those who liked the structure, found the workbooks helpful and found the tools ensured a thorough approach.

In terms of outcomes, there appeared to be three main benefits in addition to project specific ones: successful projects helped foster positive working relationships between the CCG and the practice; the approach appeared to benefit relationships within the practice, challenged hierarchies and allowed staff to feel listened; staff valued having time to reflect on their roles and processes.

Conclusion and recommendations

1. Embedding the use of the Clinical Microsystems methodology and the West Kent toolkit

Few practices had embedded the use of the microsystems methodology and related this to time, staffing and competing priorities. Successful projects resulted in improvements to systems and working practices, improved communication and team building. However, for this to happen practices had to be open to the idea of change and willing to accept an external coach. Practices that rejected what they perceived as interference were sceptical about the approach and did not engage.

Embedding the approach can be facilitated by providing:

1. Informal and ongoing support from a dedicated coach, on a needs led basis. This requires:
    i. A pool of experienced coaches who can mentor newer coaches and support practices.
    ii. All new coaches require:
        a. Protected time when learning the approach and later, to update their skills
        b. A practice to work alongside when training, and one that is 'learner-friendly'
        c. Having a co-coach or mentor for the first project
    iii. Coaches require ongoing support which should include:
        a. Protected time to prepare sessions
        b. The opportunity to co-coach to provide mutual support
        c. Being matched with practices that perceive their experience as relevant
        d. Informal support that enables them to share experiences and ideas
        e. Formal learning opportunities to refresh and develop their skills

2. Encouraging staff engagement in a specific project through:
    i. Adapting the timing of sessions to maximise attendance
    ii. Adapting the format and methodology
    iii. Establishing a contract between coach and practice as this helps with buy-in
    iv. Identifying early on who champions the process and will prompt staff participation
    v. Patient involvement from the outset, so that it becomes integral to the project
3. Motivating practices in continued use of the approach through:
    i. Formal follow-up, at 6 months and 1 year after completion of a project
    ii. Provision of a master file with the toolkit, blank templates and examples

2. Improving stakeholder perceptions of how the tools equip them to meet future challenges

Future challenges for general practice include an ageing population with multiple morbidities; workforce recruitment and retention issues; policy focused on primary prevention and integrated working; and financial constraints (NHS England, 2019). There was no evidence that participants perceived microsystems as a tool to equip them to meet these complex macro-level challenges. However, microsystems were regarded as an effective method of addressing discreet and (mostly) process driven issues.

In order to maintain currency, the programme needs to:

4. Remain visible with regular reminders so that it becomes normalised within general practice.
5. Have a dedicated post that can steer the programme and maintain visibility over time.
6. Use outcome measures that include qualitative and quantitative data which demonstrates not only the impact on process and systems but also the wider benefits for staff and patients.
7. Focus on small process driven projects with a stable core team and clear parameters. However, in the context of integrated working it is likely that some projects will cross boundaries. Where the project involves more than one microsystem, it needs:
    i. The support and involvement of senior management
    ii. Frontline staff to agree on common goals that accord with those of senior management
    iii. To be aligned with policy that all organisations involved in the process adhere to
    iv. To allow new primary care networks time to settle before introducing the approach

3. The reimbursement package as a trigger for adoption and sustainability

The reimbursement package was essential for initial buy-in and some practices stated that a longer period of follow up from their coach would have been beneficial. Practices with a positive perception of the approach were keen to adopt it but cited time, staffing and competing priorities as the main

barriers. Where a project resulted in an ongoing intervention, and funding had ceased, the intervention was not sustained and this had a negative impact on staff morale. The pressures on staff, difficulties maintaining project outcomes, and limited initiation of subsequent projects suggests that sustained adoption of the programme would require support over a longer period of time and that this support may need to include reimbursement of staff time.

To trigger adoption of a microsystems project:

8. Practices should automatically receive enhanced service payment for the first project. If the project leads to an intervention that will require ongoing resources, this needs to be considered at the outset.

For subsequent projects:

9. Where practices request funding for a second project, one option would be to ask them to submit a funding application supporting the request.
10. Subsequent projects should be self-funded so that the approach becomes embedded into practice.

Acknowledgements

With sincere thanks to the practice staff and coaches who kindly gave their valuable time to inform this evaluation.

I do think the patients benefit from that extra layer of quality, because again general practice is so busy you do everything at a superfast speed and you don't necessarily do it really well, but the Microsystem gives you the chance to sit back, look, think about it, assess it, how can we do it better

(Practice manager)

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1 Introduction

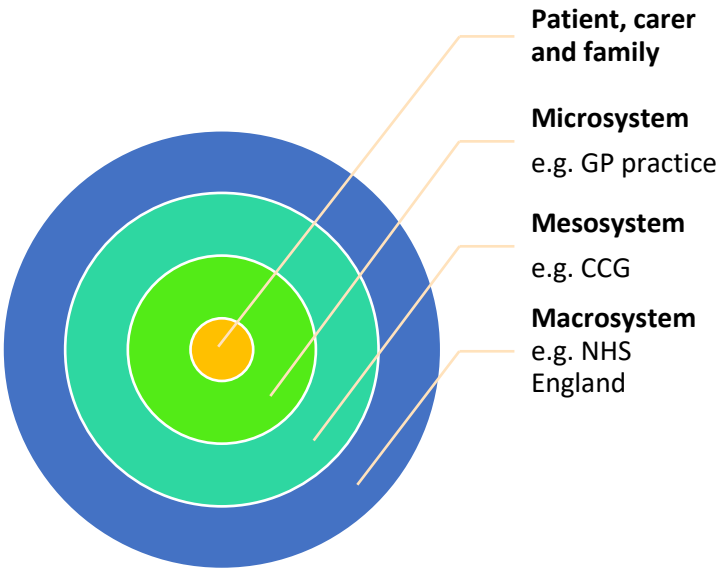
West Kent Clinical Commissioning Group (CCG) has made investment for senior manager training in the role of coach to facilitate implementation of the clinical microsystems programme developed by the Dartmouth Institute, USA (Nelson et al., 2008). The approach is underpinned by systems theory, complexity science and chaos theory (Nelson et al., 2002) and shows promise in improving quality within the NHS, particularly through its focus on nurturing strengths (Williams et al., 2009). The approach accords with new ways of working identified in the General Practice Forward View with its emphasis on quality improvement (NHS England, 2016). To-date, nearly thirty general practices in West Kent have been involved in the programme carrying out a range of quality improvement programmes (Arnold & Kankam, 2017).

A clinical microsystem is defined as a 'small group of people who work together on a regular basis to provide care to discrete subpopulation of patients' (Nelson et al., 2002, p474). It is required to carry out the work, meet members' needs and maintain itself as a functioning unit which has 'clinical and business aims, linked processes, and a shared information environment' (Nelson et al., 2002, p474). The unit produces services and care which can be measured as performance outcomes (Foster, Johnson, Nelson, & Batalden, 2007). General practices are distinct clinical practice units with a designated purpose and function, fitting this definition well (Nemeth, Feifer, Stuart, & Ornstein, 2008).

Microsystems are usually part of a larger organisation within the mesosystem which supports the objectives of a microsystem. Organisations within the mesosystem may be held accountable by the overarching macrosystem which attempts to create a 'seamless, satisfying journey' for patients (Nelson et al., 2008, p371) (Figure 1). However, social policy has predominantly focused on the organisational level and individual provider level, thus missing the potential contributions of microsystems to patient outcomes (Mohr & Batalden, 2002).

Each person's health care is likely to involve a number of microsystems and these ought to fit together smoothly to provide seamless care. First generation microsystems were regarded as an exchange between patient, information about or relevant to the patient, and clinical and support services but this loose alliance lacked coherence. Second generation microsystems aim to tailor care to each person and 'wrap around' the patient and family needs (Nemeth et al., 2008, p369). This represents 'an important shift away from general-services-organisation designs that use a single platform to meet the needs of many different patient groups' and are focused on maximising the use of limited resources (Bohmer, 2011, p2046). Instead, second generation microsystems place the emphasis on planning processes in detail, and in advance, and separate the patient population into clinically meaningful subgroups, for example, by condition or severity (Bohmer, 2011).

Figure 1: Embedded provider units in a health system



Adapted from (Nelson et al., 2008, p371)

1.1 Literature review

Most of the literature evaluating clinical microsystems stems from a series of nine papers based largely on an analysis of twenty microsystems in different areas of healthcare in North America (2000-02) identified as practice units based on quality of care and cost-effectiveness (Nelson et al., 2002). The sites included home health care, for example a visiting nursing service; inpatient care; nursing home care; primary care (heath centres); and speciality care, such as orthopaedics (Nelson et al., 2002). These were followed by a series of four articles (Godfrey, Melin, Muething, Batalden, & Nelson, 2008; McKinley et al., 2008; Nelson et al., 2008; Wasson et al., 2008) building on the original nine.

There was little literature appertaining to the UK health care setting with only one study carried out in general practice (Risi et al., 2015) with limited evaluation (Baird et al., 2018). Lessons learned included the importance of infrastructure to support teams; the need to invest in staff training; and the need for external input to support change management. Problems included lack of buy-in from all clinicians and staff turnover while benefits included opportunity for peer review of complex cases, improved safety through a second opinion and emotional support for staff (Baird et al., 2018). However, these lessons are not new and it is hard to ascertain what was directly attributable to the microsystems approach given that the process takes place within the meso- and macro-system in a context of continual change (Godfrey et al., 2008). Other studies related to general practice were from the USA, Australia and the Netherlands. Potential benefits, barriers and facilitators and

recommendations are summarised in Table 1. All studies appertaining to microsystems, but not necessarily in a general practice setting, are summarised in Appendix 1.

Most recent, Dunham et al (2018) identified twenty-two general practices across Australia as high-performing based on certain criteria. Interviews with GPs, practice managers and nurses were analysed against the characteristics of successful microsystems. The most frequently articulated views of what made them high-performing were attributed to leadership, interdependence and staff focus. Interdependence helped build a culture of learning and improvement where the team worked collectively. A key recommendation was that mesosystem support for quality improvement should focus on enabling this leadership and team building.

Table 1: Summary of primary research in a general practice setting

	UK (Risi et al., 2015; Williams et al., 2009	**USA (Michael et al., 2013; Nemeth et al., 2008)**	**Australia (Dunham et al., 2018; Janamian, Crossland, Jackson, & Morcom, 2014)**	**Netherlands (Gobel et al., 2012)**
Benefits of clinical microsystems approach	• Improved staff morale, empowerment, commitment and clarity of purpose • Shift in culture towards a more active approach to individual and collective improvement • Greater awareness of the practice's function and individual roles to deliver it • Improved communication within the team • Avoiding duplication • Improved safety by gaining a second opinion • Opportunity for peer review of complex cases • Reduced GP isolation and better emotional support • Identifying and nurturing strengths, of both teams and individuals • Greater capacity to manage externally imposed change			
Facilitators	• Inclusive leadership • Interdependence of the team • Buy-in from all staff • Maintaining a staff focus • Identification of champions of change • Celebration of positive achievements • The use 'real data' to demonstrate improved outcomes • Investment in staff training and ongoing clinical support • External input to support change management • Infrastructure to support teams/information technology			

Barriers	• The reverse of all of the above, particularly lack of staff buy-in and/or scepticism • Staff turnover • Communication difficulties within and across teams • An inability to grasp the interdependencies of the system
Recommendations	• Involve patients from the start • Develop robust process/outcome monitoring: there is a lack of measurable impact on quality, safety, productivity or efficiency

The only other publically available UK studies to-date, were a small report based on implementing the approach within community mental health teams in one NHS Trust (Gill & Gray, 2006) and a realist evaluation of six case studies in a variety of inpatient, outpatient and community settings (Williams et al., 2009). The latter was a mostly positive endorsement of the approach and tried to ascertain what worked, for whom and in what circumstances. The authors noted how difficult it could be to strike a balance between providing expert guidance whilst 'avoiding imposition and interferences' (Williams et al., 2009, p129). How the approach was presented to staff affected the level of engagement and the extent to which they sustained an ethos of improvement. Team members appeared more positive when working in a receptive institutional context, when the process was represented as 'an empowering and inclusive tool for improvement' and when outcome data demonstrated impact (Williams et al., 2009, p129). The overall focus was on staff and process which was reflected in limited patient-related outcomes and lack of measurable impact on quality, safety, productivity or efficiency.

1.2 The microsystem approach: components and tools

A qualitative analysis of 43 microsystems across North America identified ten characteristics of effective microsystems (Nelson et al., 2002) (Table 2). Integration of information and measurement are key to the process and involve effective information technology, routinely measuring processes and outcomes, and feeding the data back to providers to lead to improvements based on the data.

Table 2: Characteristics of effective microsystems ***(Mohr et al., 2003; Nelson et al., 2002)***

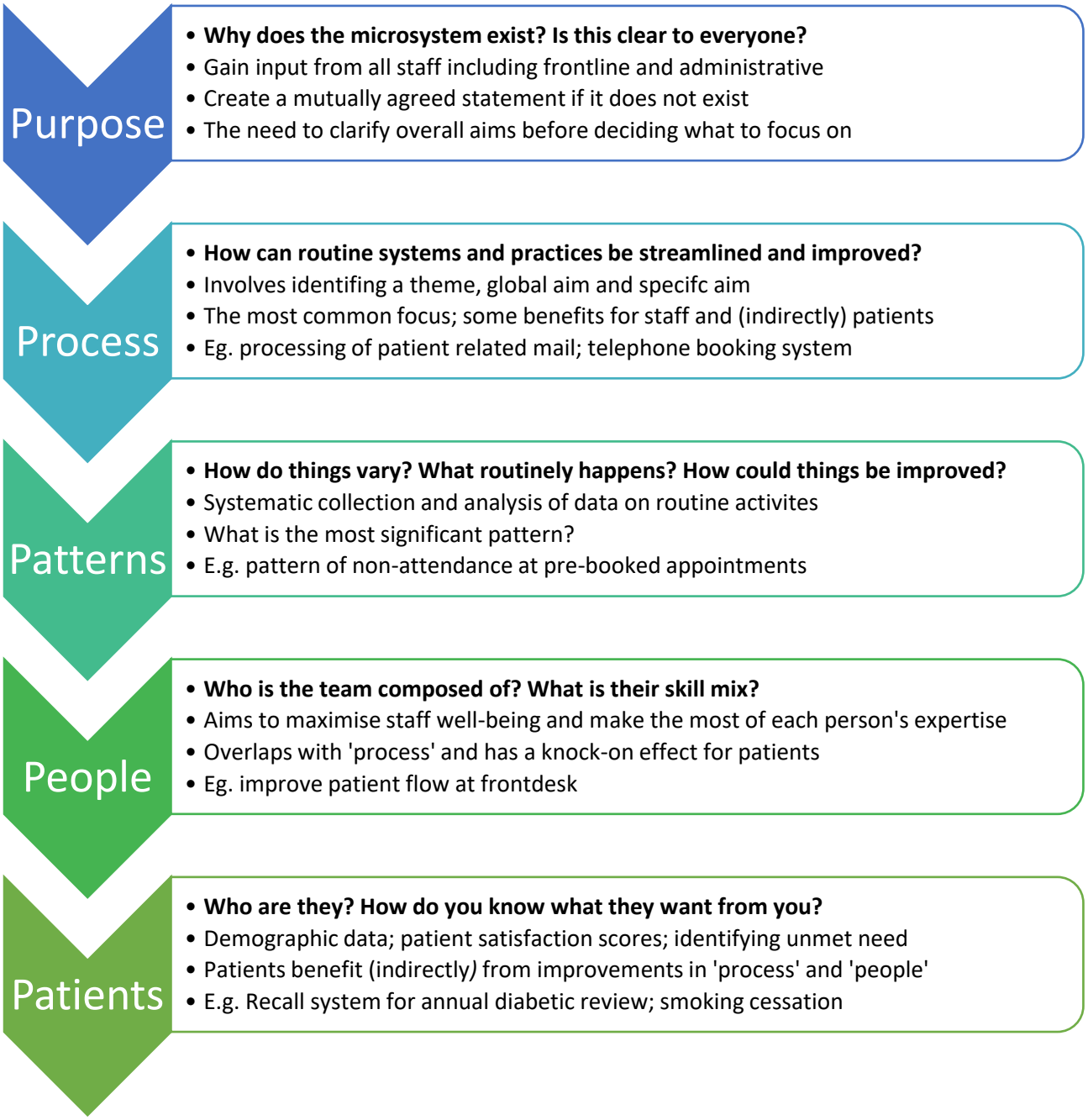
	Characteristic	Scope/underlying principle
1	Leadership	Aims to maintain constancy of purpose, establish clear goals and expectations, foster positive culture and advocate for the microsystem in the larger organisation. The leader balances setting collective goals with empowering individual autonomy and accountability.

2	Organisational support	The larger organisation provides information, resources and support. It looks for ways to connect to and facilitate the work of the microsystem.
3	Staff focus	The microsystem's vision is linked with the specific needs of staff in terms of, for example, recruitment, training/education and retention. Daily work roles are aligned with training competencies.
4	Education and training	Expectations of staff are high regarding performance, education and training, reflecting the value attached to staff.
5	Interdependence of care team	The interaction of staff is characterised by trust, collaboration, appreciation of complementary roles, and recognition of the team's shared purpose. All staff are respected for their individual role within the team.
6	Patient focus	The primary concern is to meet all patient needs, provide a smooth service and establish a relationship with community resources.
7	Community and market focus	Not in the original nine characteristics but added later (Mohr et al., 2003) this relates to interacting with external groups to, for example, reduce risk to the population.
8	Performance results	Outcomes are routinely measured, data is fed back to the microsystem, and changes are made based on the data.
9	Process improvement	An atmosphere for learning and redesign is supported by continuous monitoring of care, use of benchmarking, evaluation and innovation.
10	Information and information technology	Information connects staff to staff, staff to patients and needs with actions to meet needs. Technology smooths the links between information and patient care. Everyone gets the right information at the right time to carry out their work.

The intervention involves the coach facilitating the practice in identifying a problem or need and then developing a systematic project to address the problem. The emphasis is on developing an inclusive "whole team" approach to problem-solving with all stakeholders including practice staff and wherever possible patient representatives, taking ownership of the process. The initial step ('organise') involves creating an 'improvement team' to represent all disciplines and roles within the microsystem, including patients and families, which is responsible for the improvement work and communicating progress to the rest of the team. Step 2 ('assess'), involves appraising the microsystem and completing a workbook that is underpinned by assessing five key components, the '5Ps', needed for improvement (Figure 2). The third step ('diagnose') involves identifying the strengths and weaknesses of the system, opportunities to improve it and deciding on an overall theme, or global statement. This leads to step 4 ('treat') whereby a plan-do-study-act tool is used to identify ideas for change which are then

implemented. Finally, step 5 ('follow-up') involves embedding the new routines into practice (Godfrey, Nelson, & Batalden, 2010).

Figure 2: The 5Ps: assessing a microsystem, examples from West Kent



(Gerard, Grossman, & Godfrey, 2012; Godfrey et al., 2010)

1.3 Microsystems in West Kent

To date, nearly twenty West Kent CCG managers have been trained in the approach and conducted coaching in almost thirty General Practices (Arnold & Kankam, 2017). Through international and national networking with other accredited Clinical Microsystem coaches, it appears that West Kent CCG is leading the way in running this programme in UK general practice. Although there are limited published examples of primary care clinical microsystem informed improvements (Janamian et al., 2014; Risi et al., 2015), other UK and global examples are largely within the hospital environment (Batalden, Nelson, Edwards, Godfrey, & Mohr, 2003; Likosky, 2014). The only other known UK example of Primary Care clinical microsystems is Tower Hamlets CCG (Risi et al., 2015) who have used a predominantly data driven approach with less emphasis on coaching and relational aspects.

West Kent CCG have a database of projects including detailed process and outcome data. Practices taking part in the programme have received a reimbursement package as part of locally enhanced services. Anecdotal results suggested that this approach has had significant effect on practices in terms of addressing a particular need and culture change, although there have been challenges engaging some practices and/or sustaining involvement.

1.4 Evaluation question

This evaluation aimed to ensure the impact of the clinical microsystems programme in West Kent general practice was captured and learning identified. It intended to synthesise a broad range of perspectives from all those involved in the programme, including practices who withdrew or declined the offer of the programme. The questions were:

a) How embedded is the use of the Clinical Microsystems methodology and the West Kent toolkit?

b) What are stakeholder perceptions of how the tools equip them to meet future challenges in health care?

c) How did the reimbursement package trigger adoption of the programme?

d) Is the reimbursement package required for sustained adoption?

2 Method

A qualitative approach underpinned by implementation science methodology (May et al., 2007) and using a combination of interviews and focus groups was selected to suit the purpose of the evaluation. The first stage involved a review of completed projects. The second stage involved in-depth qualitative evaluation of a range of general practices that had engaged with, withdrawn from or declined involvement in the clinical microsystems programme.

2.1 Stage 1

A review of all projects carried out in West Kent was undertaken using existing data collected by the CCG that summarised each project including its purpose, global aims, challenges and project outcomes. It was initially anticipated that the projects could be categorised into three main types which focused on:

a) Internal business processes, such as improving administrative management of test results.
b) Improving health outputs, for example adding value to health checks.
c) Improving patient centred care, such as social prescribing or improved liaison with care homes.

2.2 Stage 2

This involved an in-depth contextual evaluation with the specific aims of exploring the extent, enablers and barriers to the implementation of the clinical microsystems methodology, indications of culture change within the practices, and the impact on general practice. Ethics approval was granted by the University of Kent.

2.2.1 Sample

A sampling frame was developed to identify exemplar general practices. Rogers (2010) Diffusion of Innovation Cycle was used to identify practices that were 'early adopters' of microsystems; those who were in the 'late majority' and who had recently completed their first project or were undertaking a project during the evaluation period; and practices that had withdrawn or did not take up offer of coaching. A range of projects were included as identified by the typology developed in phase 1. We aimed to sample three practices from each of these three categories, and to interview two to three people within each practice, or case study site. These participants included a GP, practice manager and another member of the team. As anticipated, it was not possible to interview more than one person from practices that did not take part or withdrew from the programme. For pragmatic reasons, practices were given the choice of face to face interviews or focus groups carried out at the practice, or telephone interviews. Focus groups for those who had worked on the same project were an

appropriate choice to explore ideas and gain consensus on what activities had worked, what had not, with what effects and why (Robson 2011) (Appendix 2). Interviews lasted no longer than 30 minutes and focus groups no longer than an hour.

In-depth interviews (Appendix 3) were also carried out with coaches delivering the intervention within West Kent, and wherever possible this included the coaches who facilitated the projects in the case studies. Again, participants were given the choice of face to face or by telephone and interviews lasted on average 30 minutes.

2.2.2 Recruitment

The CCG sent each potential practice an invitation and information sheet about the evaluation (Appendix 4). Those willing to participate were asked to confirm with the evaluation team within two weeks. Where there was no response, the CCG sent a reminder three weeks after the initial invitation. However, the response rate was much lower than anticipated so the CCG invited a second group of practices to participate. This led to significant delays in recruitment, more single interviews than focus groups and a limited skill mix of staff. Formal consent was taken prior to interview (Appendix 5)

The CCG also distributed invitations (with the information sheet, Appendix 6) to coaches and managers who were asked to confirm directly with the evaluation team whether they were willing or not to take part in an interview. Informed consent was taken prior to each interview (Appendix 5).

Interviews were carried out between June and September 2018.

2.2.3 Analysis

An interview schedule was devised informed by Normalisation Process Theory (NPT) (May et al., 2009). NPT provides a robust methodological approach to understanding how well a complex intervention has been normalised or embedded in everyday practice and is used extensively in health service evaluation. Interviews were recorded and transcribed. In order to provide more contextual framing to the evaluation, an analysis of pertinent documents was also undertaken. NPT was used to structure a framework to code and analyse the data. Comparative case-study analysis was used to identify and explain patterns across the different projects.

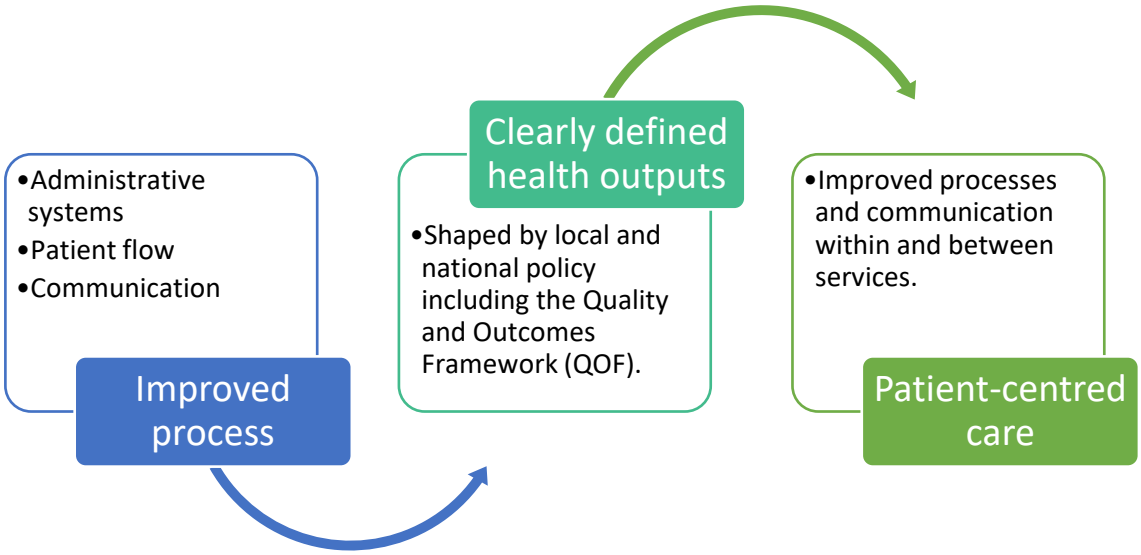
3 Findings

The findings focus on the views of general practice staff who participated in the microsystems approach. Stage one reviews the initial typology. Phase two presents the findings from interviews and focus groups with coaches and practice staff.

3.1 Stage 1: typology

The preliminary typology did not hold when applied to completed microsystem projects. The majority of projects were *process driven* activities related to administrative systems, patient flow and communication. These projects often benefited frontline staff dealing with complicated and overlapping processes. Projects directly related to *health outputs* were much fewer, and usually related to Quality Outcomes Framework targets (NICE, 2018) such as annual checks for diabetic patients. Projects that aimed to focus on patient-centred care, such as a one-stop clinic for those with long-term conditions, could also be categorised by process or outcomes for example, streamlining the process for identifying and inviting people with long-term conditions to a yearly review. However, the overlap is not surprising given that improved processes are likely to benefit the patient experience.

Figure 3: Typology of completed microsystem projects



3.2 Stage 2: Participants: coaches and practice staff

Ten coaches and one senior CCG manager were interviewed. The coaches were all commissioners and included those with managerial, service development and quality improvement roles. Most had coached in different clinical areas to that of their commissioning role. Coaches had varying levels of

experience from having carried out just one project with supervision to having carried out several and/or mentored other coaches. To protect confidentiality, coaches will be referred to as C1-10 and not differentiated by their commissioning role.

Ten general practices and sixteen staff participated. This included six interviews, two dyad interviews and one focus group of four staff. Practices included a mix of early adopters, late majority and those who withdrew or declined (table 3). Again, to protect confidentiality minimal information is provided about specific projects.

Table 3: Practices that participated

Practice	Participant's role	'Early adopter'	'Late majority'	Withdrew or declined
A	P1: Practice Manager P2: Care Co-ordinator and Administrator	✓		
B	P3: GP			✓
C	P4: GP/wider remit (education)			✓
D	P5: Patient services manager P6: Assistant practice manager		✓	
E	P7: GP	✓		
F	P8: GP P9: secretarial/prescription clerk and co-ordinator for the project		✓	
G	P10: GP	✓		
H	P11: Patient services manager		✓	
I	P12: Practice manager	✓		
J	P13: Practice nurse P14: Administrative P15: Practice nurse P16: GP		✓	

The following findings are divided into four sections which explore: expectations and aspirations; aspects that promoted participation, or buy-in, from practice staff; the process, in particular aspects that were helpful or challenging; and finally, outcomes, sustainability and embedding into routine quality improvement initiatives.

3.3 Stage 2: Aspirations and expectations

This section explores the expectations of coaches and general practice staff, how they conceptualised the microsystems approach and its relevance to their respective roles in quality improvement. The approach was new for all but one participant although several were familiar with the Plan-Do-Study-Act (PDSA) cycle.

3.3.1 General practices

Most practices became aware of the microsystems approach from CCG events and presentations but informal conversations between commissioners and senior clinicians helped encourage practices to engage. Most senior clinicians stated that they understood the purpose prior to signing up for it and therefore came with a positive attitude. However, not all staff were sufficiently briefed in advance and the assumption that they would view it with enthusiasm was not always the case, usually because it was regarded as one more demand on their time:

> *The district nurses were reluctant to attend at first, because… they didn't know the value, couldn't see the value of it... there was negativity all around, at the start* (P12, practice manager)

Early adopters had high buy-in from practice partners and managers who acknowledged that they had limited understanding of their systems and were keen to include the whole team:

> *I think it's a brilliant idea and it does definitely seem to promote change relatively quickly… because we tend to be very doctor-led within practices… making decisions and trying to make changes when sometimes we don't even know what the systems are* (P7, GP)

Some practices were looking for a way to address long-standing problems but needed an external prompt to prioritise the issue:

> *We'd had discussions prior to looking at the microsystems approach as to what we could do about it in-house but inevitably what happens is the doctors have a discussion saying we've got to do something about that and then nothing happens…* (P7)

And an incentive to encourage staff to engage:

> *We know what the problem is and we know what we want the end result to be, it was just doing the middle bit… I think by having this project in place… it brought it to the forefront… and encouraged them [staff] to be more pro-active* (P11, patient services manager)

All staff were extremely busy and this lack of time limited efforts to remediate ongoing systemic problems, even though the need was apparent, as this GP noted:

> *That [the project] was something that needed to happen and an inadequate system before wasn't an excuse not to increase that extra workload because it should've been happening all the way along* (P10)

The microsystems programme was regarded as a valuable opportunity to address either a specific issue, mostly process driven, such as establishing an effective method of managing patients' incoming test results within a specific timeframe:

> *Essentially, we had a specific problem which had been looked at previously… and we haven't established a lasting solution… so it fitted what we needed to hopefully solve that problem* (P10, GP)

Or to develop a new patient-focused initiative, such as a weight loss clinic provided on-site and individualised to the needs of a specific group, as exemplified by this exchange:

> *We were already doing health checks, how did we call people at that stage? It was all very random wasn't it, we didn't isolate specific groups…* (P13, nurse)

> *Yeah… we were getting a lot of worried well rather than people who really needed help* (P14, administrator)

Most were aware of the enhanced service payment but even without this the offer was attractive to practices who were interested in a new approach:

> *When I first started I wasn't aware that there was any payment… it was just their [the CCG's] presentation that was given us, like this is exactly what we need to be doing* (P7, GP)

Practices that withdrew perceived the approach as very much directed at analysing internal systems. They were focused on tangible outcomes such as efficiency savings and when these were not forthcoming the approach was discontinued. In comparison, early adopters saw a wider remit for microsystems that incorporated improving the experience of staff and patients with less tangible outcomes such as team cohesion.

However, within practices buy-in could be mixed, with some GPs more enthusiastic than others and this tended to result in discord and/or withdrawal from a project later on:

> *I was a little bit frustrated that we couldn't get a bit more buy-in and agreement from my partners… But that's typical, I think, of GPs in partnerships and the way that we make decisions. Sometimes you get… resistance from one quarter, and it means that, actually, you can't move ahead* (P4, GP)

However, where there was discord within a practice, the approach was regarded as an opportunity to redress internal politics and rebuild fragmented relationships:

> *So, the last practice manager had gone, there'd been a period without any, no real leadership I suppose, and the staff team was very fragmented… this was a chance to come together and work on something as a group* (Practice A, early adopter: P1, PM)

Some staff were motivated to develop their skill set alongside meeting organisational needs, for example, one practice manager did not have a clinical background, had not managed a large team and therefore viewed the programme as an opportunity to upskill:

> *I'd come from a completely different background, so it was an opportunity to learn about coaching… whatever was on offer we'd have grabbed, but that was obviously the only thing that we knew* (P1, practice manager)

3.3.2 Coaches

Coaches regarded the microsystems approach as a way of supporting general practices to build an ethos of continuous quality improvement. This included developing a skillset and a culture of reflection that facilitated practices to take control of their own improvement:

> *This was exactly why we wanted Microsystems in there, because we wanted the practice to be left with tools that would allow them to be more imaginative, transformational, and then include quality in their own environment* (C10)

Coaches wanted to demonstrate their support of practices and that they were not far removed from the daily concerns and pressures of practice life:

> *We need to kind of roll our sleeves up and support primary care, we're not just sat in an office somewhere just performance managing or contract managing all the time* (C1)

This reflected a perceived need to better embed quality improvement into practices but also to build strong relationships with practices.

3.4 Aspects of the approach that facilitated participation

There were certain elements that facilitated engagement: feeling in control of the agenda which help staff develop a sense of ownership; receiving the enhanced service payment; having at least one senior staff member who championed the approach in the context of a cohesive team; and a good relationship with the coach whose expertise was trusted.

3.4.1 A sense of ownership

The key ingredient was that all staff wanted to participate in the programme:

> *To make it work you've got to have everyone on board* (P8, GP)

Staff needed to feel that they were in control of the agenda. The coach's role was to *facilitate* identification of a project but not to decide what that project should be or how to address it. Often the project related to a long-standing systemic problem which staff wanted to remediate and could envisage how the approach might achieve this:

> *The trainer came, the room was full and… she asked lots of questions that helped us to select… the topic that we wanted to pursue, and I think a lot of the people in the room were surprised… we came out with a lot of suggestions* (P2, care co-ordinator)

Coaches understood this and wanted to support practices to set their own agenda:

> *It's about the practices deciding what the challenges are and coming up with a solution and… empowering them and them feeling part of the decision-making process* (C7)

However, participation was limited if practice staff felt 'coerced' into accepting the programme, had prior unsuccessful attempts at solving a problem or external input which was perceived as interference. However, when a senior partner supported the approach, buy-in improved and an external source was deemed as positive:

> *There was some pessimism amongst some of the partners and management staff… if there would be a lasting solution and that the staff would get on board, and various objections raised, so it seemed like a good opportunity to put in place a process that was slightly at arm's length from a top-down management and hopefully get the staff on board* (P10, GP)

3.4.2 Reimbursement

The enhanced service payment appeared essential for practices to engage in the initial project. It allowed staff to be released for meetings and allayed anxiety that colleagues would perceive this time as not best spent. Not all practices used the money for a locum, either because they could not find one, or because they used the money in other ways. Rather, it was regarded it as an incentive:

> *[It was] reasonably generous and proportionate for the time taken, but it wouldn't actually give us workforce, because actually locums are very hard to come by… it was… an incentive rather than, perhaps, something that would enable us to buy backfill* (P4, GP)

In addition, the payment helped lend the project credibility, improved buy-in from those who had reservations and facilitated completion:

> *It gave it kudos to the partners because they're obviously the ones who have got to make the decision whether we put the time into it… I don't think they would have been as welcoming to it had they not received that* (P11, patient services manager)

Coaches also recognised the important of the payment, given that practices are businesses:

> *I don't think we would have had any practice engage if there wasn't any financial reward… because it was taking time out of their day-to-day work and for GPs time is money… they're small businesses, everything is about money, they need to pay their staff, they need to pay themselves* (C6)

However, some felt that practices were only interested in remuneration whereas coaches wanted to foster an environment of shared learning. Coaches also suggested that practices needed to absorb the costs of subsequent projects:

> *I think unfortunately a lot of GP practices see it as "What's in it for me?", we've, unfortunately we have a number of meetings and forums where their attendance is paid so there's an expectation that that's how it works* (C7)

3.4.3 The 'champion' within a cohesive team

All successful projects had at least one staff member who 'championed' the approach and kept staff motivated and engaged. This person did not have to be a senior clinician and some thought it preferable not to be the GP, given that GPs would not have sufficient time, tended to use language that other staff did not understand and could be difficult to challenge. Champions often worked on the project in their own time, reminded staff to carry out their 'homework' and prompted them to attend meetings.

Successful projects included all staff and this went hand-in-hand with the role of champion and challenging hierarchical boundaries. Where it worked well, staff felt valued and both coach and champion enabled all participants to contribute:

> *I'm personally convinced of the methodology that involves everybody, so that, and you're not just giving doctor perspectives… the whole system is invited to comment* (P4, GP)

Communication between the microsystem and the wider team was also important to maintain buy-in from staff not directly involved:

> *And to have a nurse, a doctor, a practice manager, a receptionist, each going back then and reporting to their colleagues, so that everybody knew… the nurses could tell their nursing staff, as a receptionist I went and said, look, this is what we're doing and this is why we're doing it, it's not just a meaningless instruction, it's because we're trying to achieve this and this is how we're going to do it.* (P2, care co-ordinator/administrator)

Where the team had experienced internal conflict (either the microsystem team or the whole practice) this made it harder for the champion to keep staff engaged and could make meetings difficult for the coach:

> *There were times where sometimes you could feel the tension between them, so as a coach you're kind of trying to manage that more than the actual policy improvement project* (C1)

When a project crossed organisation boundaries, a strong champion and coach were needed to draw the two teams together and develop an understanding of each other's perspective. This allowed the two teams to find mutually beneficial ways of addressing a problem:

> *It was really good to meet with the nursing homes… it's very much a them and us, wasn't it, before, but when you hear what their problems are, you can appreciate it a bit more* (P8, GP)

However, when buy-in from one team was limited, it was much harder to engage staff from the other organisation and this resulted in less successful outcomes and/or lack of sustainability:

> *The buy-in wasn't as we expected, for instance we had mostly if not all attendants by one or two district nurses themselves, but very little attendance, if any by the managers* (P12, practice manager)

The champion was also an important ally for the coach, maintaining staff participation when there were mixed feelings about the programme:

> *You do need champions, that's one of the things that we learnt is that you need an enthusiast who will fly your flag for you and if there's a bit of negativity or we're not quite sure why we're here initially, if you've got a positive role model that really helps to get everyone on-board* (C4)

3.4.4 The coach as facilitator and ally

A good working relationship with the coach, built on trust and mutual understanding, was essential and helped practices understand the CCG's role. Staff appreciated the coach's skills, humour and perseverance:

> *She was very willing to listen, she was very useful, she was very good at controlling the meeting, we all got given tasks… and that was quite a useful process, because it meant that we all got involved* (P5, patient services manager)

In only one instance, staff felt the coach underestimated their knowledge and skills which caused irritation but did not detract from the overall value of the project.

When the coach had prior experience that was deemed relevant and/or a clinical background this helped build trust and cement the relationship:

> *She was very good… really helpful, really supportive, she brought ideas from what other practices had done… she'd worked with people who were a bit further on than we were… I think she came from a hospital environment… she was really informative and gave us good encouragement and kept us on track* (P11, patient services manager)

Some practice staff were ambivalent about the level of expertise and experience needed to coach effectively. A lack of grounding in the issues was regarded as a limitation but not necessarily detrimental to the relationship or project outcomes:

> *So he's very much a facilitator, he'd chair it, he knew the process, so he'd lead us through the process, but actually his understanding of mental health problems relating to dementia homes… I'm not surprised that he was sort of limited… but, no, he was absolutely fine* (P8)

However, one coach with a general practice background suggested this could be a disadvantage as the temptation was to offer solutions rather than simply facilitate. This emphasis on facilitation ran through many of the coach interviews as these two quotes, with and without primary care experience respectively, demonstrate:

> *It was about getting them to come up with the ideas… at the beginning you're… contributing to everything, but then you sit more and more and more back and you let them get on with it* (C4)

> *Not having worked in a GP practice, sometimes that can be challenging but… one of the key things we tried to promote was that… we wanted them to work through their problems and issues themselves* (C1)

There were mixed views about the merits of having an external coach from the CCG compared to having an 'internal' coach, or one trained within the practice. However, many staff favoured an external coach because the coach was objective and had not been part of previous unsuccessful projects:

> *Having somebody who's outside of the practice is vital because they keep you on track and they're fresh eyes in the whole process* (P11, patient services manager)

In addition, an external coach kept staff on track and they felt compelled to persevere even when it would have been easier to postpone meetings:

> *It's very easy to put off a meeting because something crops up, because [the coach] was coming… we knew we had to give up that time… we never cancelled anything… it did focus our minds* (P5, patient services manager)

Similar to needing a strong champion to break down entrenched hierarchies, coaches were perceived as sufficiently outside the practice to mediate disagreements and challenge staff:

> *I think external is always good because they have no preconceived ideas of hierarchy… she could just say what she thought… if it was kind of a receptionist trying to say something to a senior partner I think that would be tricky* (P7, GP)

The majority of coaches did not commission services for the area that they coached and this avoided a conflict of interest. However, high expectations could be daunting, especially for a first project, and touched on comments about who was responsible for what:

> *They had great expectations that I would lead them through such enormous change and it was going to be, you know, all roses! I think as the work went on I became seen as…a trusted friend probably, trusted colleague* (C9)

3.5 Microsystems process: benefits and challenges

This section summaries views about the *process* of working through the microsystems approach. Common criticisms were that there was too much theory at the start; the process was unnecessarily rigid; and it took too long. This was countered by those who liked the structure, found the workbooks helpful and perceived the tools as ensuring a thorough approach.

3.5.1 Positive gains

A key asset of the process was how it included all staff, especially administrative and frontline staff who usually had limited say. GPs commented that they became more aware of just how much their staff contributed to the practice and that overall the process boosted morale:

> *We were suddenly aware that actually we don't really know what… happens in the office when, you know, we say do this and it just gets done, but we don't know the process behind that… it's pretty good for staff morale actually because then suddenly you're asking someone who never really gets asked their opinion on what the best way to do something is* (P7, GP)

Most participants liked being led through a series of tasks because they could see the progression and this contributed to maintaining a safe forum where views could be expressed without anyone taking offence:

> *It's just having the opportunity to say what those concerns are without any… defensiveness from the other side... talking to them about how things were and us talking to them about how things were here, you appreciated the fact that, yeah, that was a bit of a problem for them and for us* (P9)

The workbooks were helpful because process was documented and this could be referred to in subsequent projects. The systematic approach also identified issues that might otherwise have been overlooked:

> *It does give you a really structured framework to work on and does bring up things that you potentially haven't thought about* (P7)

The counterview to liking a structured approach was that it constrained creativity and a little more flexibility might have paid dividends. Some questioned how important the structure was compared to the overall commitment to change:

> *Having a structure was helpful… whether it precisely had to be that structure I'm not sure. I think the fact that there was a coach and there was a commitment to progressing was probably more important… it's perhaps a bit theory-heavy to start with… without very much action happening but… if you stick with it you get to the beneficial part* (P10)

Coaches and practice staff expressed mixed views about learning the theory alongside the first project. Some suggested that a brief overview prior to commencing a project would have been helpful while others thought this was unnecessary.

However, even within the context of disappointing outcomes, participants still identified positive aspects of the process in terms of team building and inclusiveness:

> *I thought it highlighted very nicely how every member of staff is valuable and how each of them have their own roles and own thing to give to any system… how important knowing their opinions and the ideas that they came up with was also quite unique because they know all the problems* (P16)

3.5.2 Challenges

The main dislikes were interlinked: there was too much theory; the process was too slow; and it was overly structured, as above. These issues were common when buy-in was already limited and staff were stretched:

> *We're a busy practice, we don't have much time for anyone… they were given an hour but she always overran and we weren't gaining enough out of that hour. We could've done a lot better ourselves if we'd bothered to spend an hour looking at these things* (P3, GP)

Similarly, clinicians expressed a sense of urgency that they felt the coach did not always appreciate but coaches clearly did understand how busy practices were:

> *We were quite clear that we would only be with the practice for an hour. We did that on the basis that actually a meeting any longer than an hour just become a talking shop and you don't necessarily deliver quickly… it was almost giving an indication to primary care that we know that their time is precious* (C1)

Conversely, in the early stages of coaching, some coaches also found the process rather slow:

> *I think some failed because actually it felt too slow, it felt too long, it felt too hard. Then there's winter and so lots of things would come along and trip them up and they'd seem to lose that energy or that enthusiasm… as coaches at the beginning, especially when we were new, it did take quite long* (C3)

Some participants found the terminology off-putting although initial scepticism generally improved once the project was established and the team were committed to completing a project:

> *I had very low expectations… it sounded very American and some of the terms she used were very clichéd but I think once we got it started it was a really helpful exercise* (P13, practice nurse)

In terms of the format of meetings, views were mixed, with some staff liking a formal approach and others finding it unnecessary:

> *There was a lot of time talking about how the meeting was going to run, what everyone's role was within the meeting… the team just felt it was a waste of time… We didn't really need to talk about how microsystems worked or who was going to be the time keeper* (P3, GP)

The expectation was that meetings would be solely focused on their own systems and not on the microsystems process which was perceived as irrelevant; GPs wanted a fast tool to remediate problems not to learn about theory. This was related to their task-orientated outlook which was at odds with 'management-speak':

> *Team members were inclined to leave the team after they'd signed up initially because it seemed to be quite tedious and lots of talking and not a lot of doing and they weren't really signed up for management style meetings, they're not that sort of staff* (P10, GP)

Most were clear that the coach's role was facilitator but some staff questioned who was responsible for completing tasks in between sessions:

> *Are they just a facilitator… in which case… they do the business and they leave till the next meeting, or should it be identified who's going to be responsible for that follow-up… we'd get to the next meeting and the actions, things move slowly…* (P12, practice manager)

Although coaches were clear that practice staff had to take ownership of actions, some admitted doing more than they probably should have, in their own time, especially when coaching for the first time. This was allied to trying to make the relationship work but also foster a sense of responsibility within the practice. Essential to this was:

> *Good, open, honest communication, but I think the practice taking responsibility and not relying on the coach to be doing all the work and the coach driving it* (C2)

Where appraisal was negative, as previously mentioned, this related to a mismatch of agendas between coach and practice and the perception that microsystems may have unintended negative consequences that the practice would be left to deal with.

3.6 Outcomes, sustainability and embedding into practice

This section considers the longer-term impact of microsystems in terms of sustainability, embedding into practice and views about the overall strategy. Key problems with sustainability were lack of time, staff turnover and reverting to previous/familiar patterns of behavior. The section starts by describing positive outcomes attributed to the process of microsystems.

3.6.1 Practices

There appeared to be three main benefits in addition to project specific outcomes. First, successful projects helped foster positive working relationships between the CCG and the practice and this supported ongoing and mutually beneficial communication:

> *Having a coach from the CCG coming in built a relationship between me and the CCG… [the practice] has continued to benefit over and over again because of that relationship* (P1, practice manager)

By breaking down barriers, the effects of this lasted longer than the timespan of the project:

> *It made her [commissioner] more acceptable, she's been quite a key player in the progression of things locally anyway… face-to-face meetings with anybody inevitably makes them easier to approach* (P7, GP)

Secondly, the approach appeared to benefit relationships within the practice, challenged hierarchies and allowed frontline staff to feel valued and listened to:

> *I learnt… about involving a wider team, about getting buy-in from the people on the ground who will need to be implementing any solution, about perhaps being less hierarchical about things* (P10, GP)

For example, one practice had subsequently initiated a short meeting every morning where anyone could contribute and this had helped build a more cohesive team following a period of change.

Thirdly, the programme allowed staff time-out from everyday pressures which allowed them to reflect and challenge processes that they had long adhered to, as these practice managers identified:

> *It gives you the chance to sit back, look, think about it, assess it, how can we do it better* (P1)

> *The positive is it gave you an opportunity to come out of that… every day pressure* (P12)

However, successful projects required considerable time and commitment, frequently more than was anticipated, and often required staff to work in their own time:

> *There was a commitment to releasing members of staff, including myself as a partner, to attend those meetings. There was a commitment to work on the action points that came out of those meetings and… to spending further time on the project outside of the meetings which weren't directly reimbursed* (P10, GP)

Sustainability rested on time, maintaining motivation and 'having the right personnel in place to make it work' (P8, GP). Where staff changed or had too many competing demands, things slipped, especially when it involved an intervention, such as diabetes annual checks:

> *The outcomes would have been sustainable if the team hadn't changed… our model was dependent on the skill mix that we had at that time and then the doctor… left so we got a new doctor who wasn't so happy with the way that we'd set things up and then the nursing staff changed as well* (P7, GP)

Similarly, another practice had started a weight management initiative which was working well but when external funding was cut the project stopped and staff found this extremely frustrating:

> *What we actually need, there was no funding for …it all came out to a blank… if you can't offer the service at the end, what's the point, that's the main frustration for us* (P13, practice nurse)

Sustainability was particularly difficult when a coach left or a project involved two organisations. Both involved staff changes that upset the relationship between organisations and was detrimental to outcomes and sustainability:

> *Whereas we're static if you like, and they [district nurses] get moved area, the teams change, they have recruitment difficulties… it's a whole different organisation of which we have no jurisdiction, which was different to the second microsystem that we did that was in-house* (P12, practice manager)

Across all projects, in the context of competing demands, staff tended to revert to previous familiar methods:

> *Inevitably people's enthusiasm dies… we were changing things that had been done in the practice the same way for years and so people then just slip back to doing what they've been doing before* (P7, GP)

In terms of embedding the approach into practice, opinions were mixed. The most negative perception viewed microsystems as a commercial enterprise that re-packaged old ideas and was overly complex.

While a lot was attributed to lack of time and resources, practices that carried out further projects adapted the process, using the tools they found helpful and discarding others. The need to keep the approach visible, promote ownership and maintain enthusiasm was highlighted:

> *You've got graphs on the wall, of how much we were achieving, so every time somebody came in to make a cup of tea they felt like they wanted to contribute to making that a success, but now we've got nothing visual, and people don't actually know what's going on, that's contributes to how we've lost the momentum* (P1, practice manager)

Participants differentiated between carrying out a project with a coach and doing one independently. Some practices (and coaches) felt that they needed a refresher, perhaps six to twelve months later, to review progress, address problems and upskill:

> *The improvement… shouldn't ever really end… you don't need the regular meetings but you could probably do with a 6 monthly review which maybe then goes to an annual review, because… I handed it over to somebody else… and then bit-by-bit it sort of all fragments* (P7, GP)

Finally, one GP, while positive about the approach, questioned the feasibility of continuing at a micro level and suggested that economies of scale might be achieved by instigating change at a higher level:

If we can find the time, it could be great because then we could streamline every single problem… I think a probably better alternative would be looking at it at scale… so if there is a problem at scale then you would involve say a member of every practice… realistically within our current environment it's probably going to be more useful if you're putting it at a macro or mesosystem (R16, GP)

3.6.2 Coaches' perceptions

Several coaches suggested that there needed to be a full-time dedicated lead for microsystems to become widely accepted, employed and embedded within primary care. At the individual level, the key to sustainability was time:

The coaches from the CCG have got to be really committed to make it work and make time for it… that can be really hard when there's competing priorities (C2)

The training required a lot of work, often in their own time, which had been anticipated but the ongoing commitment needed for each project could be more than expected, coupled with trying to fit it around their main job. Despite enjoying the experience, some had not volunteered for further projects because of the time involved and, to a lesser extent, the lack of recognition:

If somebody had said to me do you want to make that half of your job or the whole of your job, they might well have got me interested in that. But it was very difficult to do it when you do a full-on [job], and I know that I'm not the only coach who thinks that and I think towards the end people's enthusiasm waned because they felt there wasn't much recognition of what you were actually putting in (C9)

Most coaches accepted that they were expected to absorb the additional workload and did not expect reimbursement but they did want some sort of recognition for their effort. This linked with the issue of support which some had accessed and found helpful while others wanted a more informal forum to exchange ideas and experiences, not all of which were positive:

As coaches we had to stick together… we had to create an environment whereby we could just keep it going, like "I don't know what to do, I've been in there for an hour, they're flat and nobody's said a word", that kind of thing, or "I've tried that tool, they didn't get it, I don't know how to explain it". And so we created a support for each other where we could… listen to each other (C3)

Some of the newer coaches were vulnerable, going into a practice they did not know and with limited experience of primary care, but over time turned this to their advantage:

It's quite a sensitive thing isn't it, to learn to be a coach and to get feedback about what's good about your coaching technique and what's not so good about your coaching technique (C5)

I wanted to show that vulnerability in the sense that I didn't want them to think that I was just somebody from the CCG who's going to come in and know it all because actually I didn't, so I was trying to bring myself, integrate myself into the team (C1)

Co-coaching was a useful method of supporting newer coaches. It also helped share the workload which was regarded as more sustainable:

> *I'm really pleased that I was co-coaching, otherwise I might have taken it a bit more personally, but I did have my colleague… to sound things out with and talk about what had happened* (C2)

All coaches aspired to leave practices with the microsystems tools to use however they wanted but this appeared to underestimate the difference between having an external coach and leading their own project:

> *[It was] around leaving them with the tools, so it was almost like a training the trainer type approach… to leave the practice with the tools so that… they could continue as and when required* (C1)

Opinions were mixed as to whether it would be better to train practice staff to coach or continue training only CCG staff, given both are likely to change over time. Participants thought that without regular opportunity to coach, whoever was trained would be likely to forget the competencies and skills needed to manage a project.

Coaches suggested staff needed more time to embed the process into practice and that it was possibly over ambitious to have expected this with just one project:

> *We were hoping that once you've been there… you leave them the tools and you expect them to carry on… But thirteen weeks is not enough for them to understand all their 5Ps, the Fishbone…, to be able to do a run chart… collate their data, show their data and all of that… at the last conference [in Sheffield] they were saying… you have to work with the practice for about two years* (C6)

Commitment was highlighted as crucial for sustainability and a contract was one way of trying to secure this:

> *I think you do need, you need evidence perhaps that as a partnership they have committed to it… We learnt that to get a coaching agreement is really, really important so that you actually have got a contract if you like between the coaching and the model and the practice* (C3)

In terms of outcomes, coaches had similar views to practice staff. As well as process outcomes, they valued the wider benefits of improved relationships with the practice, and within the practice itself. When this did not happen, it was usually due to peripheral issues (which GPs concurred with), often staffing:

> *The practices who struggled for me the key thing is they weren't ready because they had lots of other challenges going on in their own environment* (C6)

Finally, even though most projects were system driven, coaches were unequivocal that better processes led to improved patient care and alluded to patient involvement in microsystems. However, projects that included a patient representative identified difficulties doing so:

> *I'd liked to have had more patients, it's all about the patients, everything we're doing is for the patients and if they're not involved in the process then what's the point* (P1, practice manager)

4 Addressing the research questions

This section summarises the findings in relation to the research questions:

4.1 How embedded is the use of the Clinical Microsystems methodology and the West Kent toolkit?

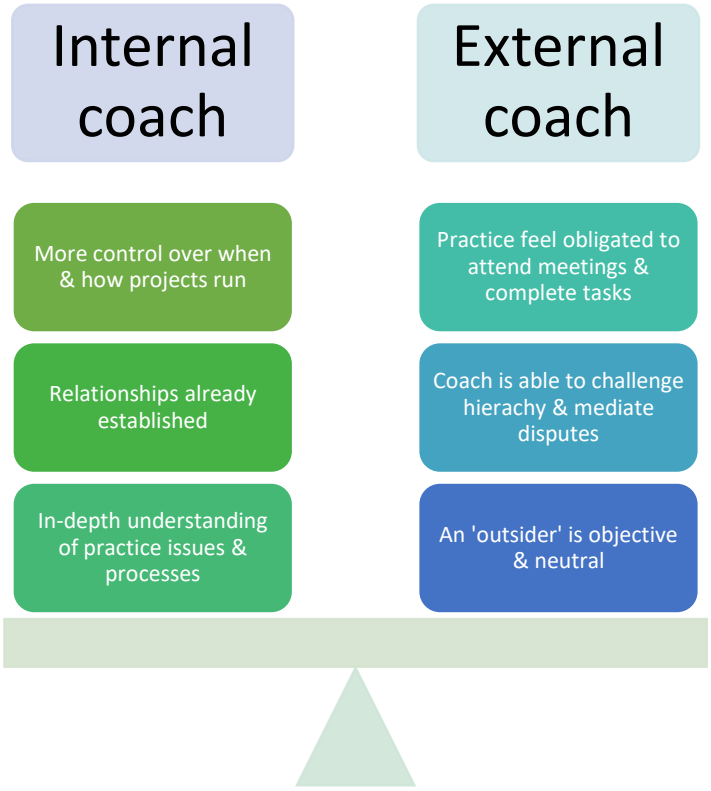
Few practices had embedded the use of the microsystems methodology and related this to time, staffing and competing priorities. A key outcome of the process was improving relationships and building team cohesion between all levels of staff within a practice. This also involved relationship building between CCG and practice but coaches had to strike a delicate balance between providing advice without imposing their views. However, some practices did not want CCG involvement which they regarded as external interference; they were sceptical about the 'new' approach and either withdrew or did not engage.

Practices that were open to exploring microsystems needed at least one member of staff to advocate the approach to their colleagues. While this mostly led to completion of a project, it was not sufficient to sustain the approach and staff described a tendency to slip back into habitual ways of working and other demands taking precedence.

The benefits of having an external coach compared to training someone within the practice (Figure 4) were mixed, as found elsewhere (Janamian et al., 2014), but several participants stated that an external coach helped sustain the project. It was not possible to ascertain whether an internally trained coach given sufficient time and resources could embed the process into practice better than an external coach and what this would depend on. Either way, to embed into practice would require senior staff to support the process, provide inclusive leadership and foster a culture of quality improvement (Dunham et al., 2018). To sustain changes would have required more time, staffing and resources than was available and without which morale and progress tended to taper off.

The toolkit was useful in that it facilitated staff to follow the process in a methodical way; decisions were documented; and the completed workbook provided a guide for subsequent projects. However, the toolkit was not embedded into practice either because there were no subsequent projects or because participants preferred their own 'pick and mix' approach in an attempt to streamline the process, mainly to save time. Overall, it was the enthusiasm and drive of coaches that had greater impact than the toolkit.

Figure 4: Embedding into practice: the benefits of an internal versus external coach



4.2 What are stakeholder perceptions of how the tools equip them to meet future challenges?

Future challenges for general practice include an ageing population with multiple morbidities; workforce recruitment and retention issues; policy focused on primary prevention and integrated working; and financial constraints (NHS England, 2019). There was no evidence that participants perceived microsystems as a tool to equip them to meet these complex macro-level challenges. However, microsystems were regarded as an effective method of addressing discreet and (mostly) process driven issues.

Small projects with a stable core team and clear parameters were more successful than larger projects that involved more staff, had a wider remit and crossed microsystems. This is clearly intuitive given the basic concept of microsystems but some participants had strong rationale for working across boundaries, or in the realm of mesosystems, but encountered cross-organisation barriers that made it difficult to sustain projects. In the context of primary care clusters, also known as hubs or networks, working across boundaries is clearly a future challenge but few participants appeared to have considered microsystems as a key contender for addressing this challenge.

One aspect of meeting future health care needs identified by policy is that of Patient and Public Involvement (PPI) with quality improvement (PPI) (NHS England, 2014). However, practices found it difficult to involve patients and the microsystems approach does not focus on PPI, although this is unsurprising given its emphasis on systems.

4.3 How did the reimbursement package trigger adoption and is it needed for sustained adoption?

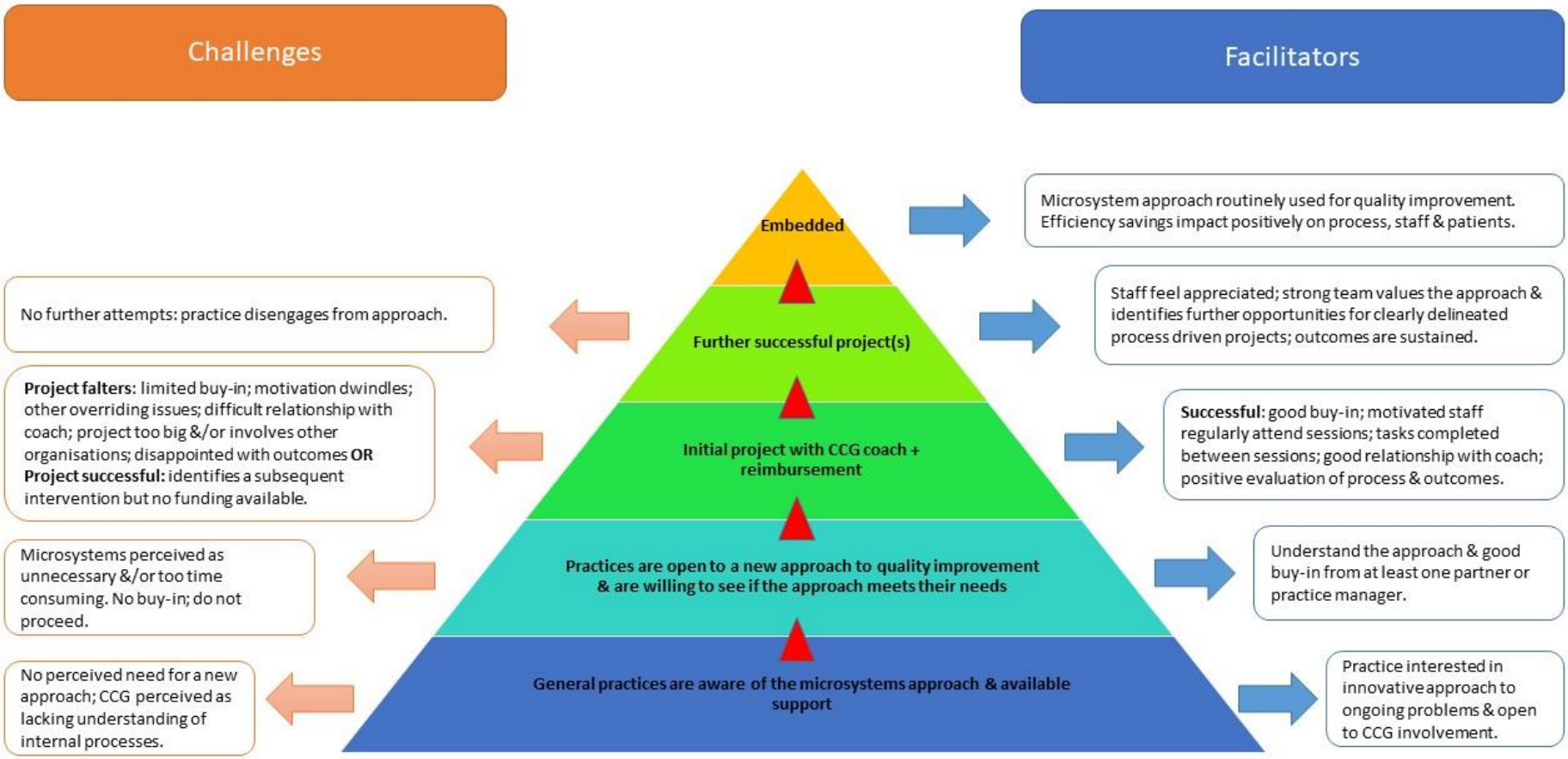
All practices stated that the enhanced service payment was essential for their first project and without it the programme would not have been adopted. There was no clear evidence of cost savings, even when programmes were designed to address QoF targets.

Views were mixed as to the merits of reimbursement for subsequent projects in order to promote sustainability. Most coaches thought that for the approach to become embedded would take longer than the duration of one project because practice staff have to become familiar with the approach and see that it pays dividends over time. However, this was set against the need for practices to take ownership of the approach which included self-funding.

The practices that had tried to embed the approach cited the main barriers as time, staffing (and staff turnover) and competing priorities, rather than cost. The exception to this related to projects that led to an intervention because practices found ongoing costs were unsustainable. Some partipants wanted a longer period of follow up from their coach to boost morale and help find ways of sustaining project outcomes. The pressures on staff, difficulties maintaining project outcomes, and limited initiation of subsequent projects suggests that sustained adoption of the programme will require support over a longer period of time and that this support may need to include reimbursement of staff time.

Figure 5 summarises the key facilitators and challenges to engaging stakeholder, sustaining outcomes and embedding the approach into practice.

Figure 5: Challenges and facilitators to embedding the microsystems approach within general practices



4.4 Study limitations

The main challenge was recruiting sufficient GP practices particularly those who had not participated or withdrawn from a project. This resulted in significant delays with data collection. It was also difficult to engage more than one person per practice which limited the range of perspectives represented in the data.

5 Conclusion and recommendations

The study has explored stakeholder perceptions of the microsystems approach in West Kent. A major strength of the approach is its alignment with national policy which lends it credibility and is likely to promote staff buy-in (O'Dwyer, 2014). Aspects of the approach which facilitated participation were reimbursement for the first project; a sense of ownership; having a champion who advocated the approach to colleagues; and a good relationship with the coach. However, only a few practices had embedded the approach into practice with the main barriers being time and resources. There were also difficulties sustaining the outcomes of specific projects, a tendency to revert to prior routines and funding projects that involved an intervention. Where projects faltered, this was mainly due to the perception that the approach was too slow, too structured and too theoretical. Practices that declined saw no need for a new tool that was perceived as being externally imposed upon them.

Views were mixed about having an external coach from the CCG but a key benefit was better relationships with the CCG, mostly sustained beyond the project's lifespan.

An important issue is how the approach is presented to staff by the larger organisation in a manner that sustains interest and credibility (Williams et al., 2009). There were mixed views around the benefits of upscaling and a sense from coaches and practice staff that the approach had lost momentum. To regain impetus, it was suggested that there needed to be a full-time dedicated lead coupled with clear strategic direction.

The key elements to embedding the approach into practice involves supporting coaches and engaging practices which in turn will lead to building sustainability (Figure 6).

The following recommendations (Table 4) are divided by research question.

Figure 6: Developing sustainability of the microsystems approach

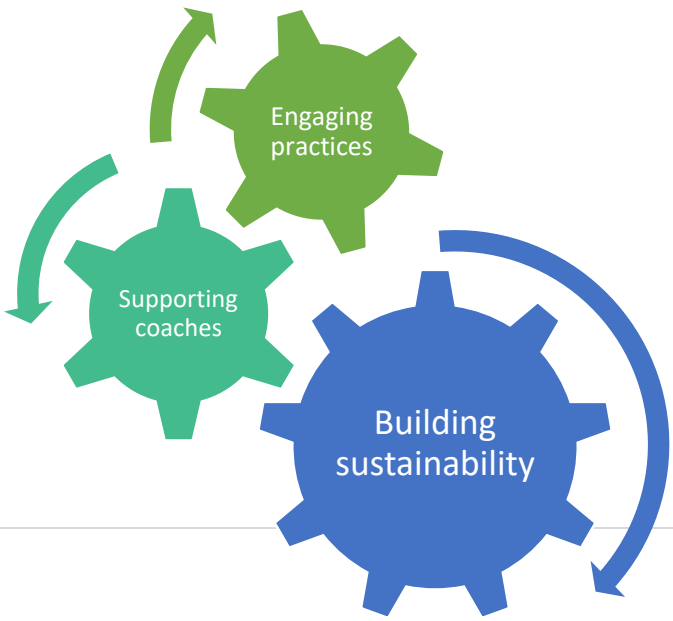


Table 4: Recommendations for developing the clinicial microsystems approach in West Kent

Research question	Recommendations
Embedding the use of the Clinical Microsystems methodology and the West Kent toolkit	Embedding the approach can be facilitated by providing: **1.** Informal and ongoing support from a dedicated coach, on a needs led basis. This requires i. A pool of experienced coaches who can mentor newer coaches and support practices. It would be advisable to maintain the skills of existing CCG coaches in addition to training new coaches within practices. ii. All new coaches require: a. Protected time when initially learning the approach and later, to review and update their skills b. A practice to work alongside when training, and one that is 'learner-friendly' c. Having a co-coach or mentor for the first project iii. Coaches require ongoing support which should include: f. Protected time to prepare sessions g. The opportunity to co-coach, not just to share the workload, but also to provide mutual support particularly when projects falter h. Being matched with practices that perceive their (clinical) experience as relevant i. Informal support that enables them to share experiences and ideas j. Formal learning opportunities to refresh and develop their skills **2.** Encouraging staff engagement in a specific project through: i. Adapting the timing, for example, it is easier to find GP locum cover for half a day rather than an hour per week ii. Adapting the format and methodology, for example: a. Rather than initially focusing on theory, a brief overview that links process to outcomes would suffice b. Expand on theory if/when staff require and linked to specific methodological issues c. Where staff dislike the terminology, the coach can encourage them to identify alternatives

	iii. Establishing a contract between coach and practice as this helps with buy-in iv. Identifying early on who supports, or champions, the process and will prompt staff participation v. Patient involvement from the outset, so that it becomes integral to the project **3.** Motivating practices in continued use of the approach through: i. Formal follow-up, at 6 months and 1 year after completion of a project, to boost motivation, review progress and refresh skills. Further follow-up would depend on how embedded the process had become ii. Provision of a master file with the toolkit including guidance, blank templates and examples
Improving stakeholder perceptions of how the tools equip them to meet future challenges	In order to maintain currency, the programme needs to: **4.** Remain visible with regular reminders so that it becomes normalised within general practice **5.** Have a dedicated post that can steer the programme and maintain visibility over time **6.** Use outcome measures that include qualitative and quantitative data which demonstrates not only the impact on process and systems but also the wider benefits for staff and patients **7.** Focus on small process driven projects with a stable core team and clear parameters. However, in the context of integrated working it is likely that some projects will cross boundaries. Where the project involves more than one microsystem, it needs: i. The support and involvement of senior management ii. Frontline staff to agree on common goals that accord with those of senior management iii. To be aligned with policy that all organisations involved in the process adhere to iv. To allow new primary care networks time to settle before introducing the approach
The reimbursement package as trigger for adoption and sustainability	To trigger adoption of a microsystems project: **8.** Practices should automatically receive enhanced service payment for the first project. If the project leads to an intervention that will require ongoing resources, this needs to be considered at the outset For subsequent projects:

	9. Where practices request funding for a second project, one option would be to ask them to submit a funding application supporting the request **10.** Subsequent projects should be self-funded so that the approach becomes embedded into practice

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Appendix 1: Summary of studies appertaining to clinical microsystems

Author	Setting	Aims	Methodology	Sample size	Key findings
Literature relating to general practice and/or UK healthcare context (most recent first)					
(Dunham et al., 2018)	**Australian general practices**, metropolitan and rural	To identify the success attributions of high performing Australian general practices. The attributes were compared to the framework of success characteristics in microsystems.	Qualitative/ interpretive. Semi-structured interviews and content analysis.	Twenty-two general practices identified as high performing (using 10 success criteria). The 52 participants were 19 GPs, 18 practice managers and 15 practice nurses.	Participants **most frequently attributed success to inclusive leadership**, **interdependence** of the team, **patient focus** and **staff focus**. Honesty and trust displayed by team members helped to create 'cultures of learning and improvement' whereby the team could collectively improve things. **Barriers** were couched in terms of deficits in, or limitations of the success characteristics. Structures and processes at practice level govern delivery of care.
(Baird et al., 2018) *Same study as Risi (2015), below*	**General Practice, UK/ international**	To explore different delivery models in general practice that could address current challenges in UK general practices.	Report based on literature review and interviews with a variety of stakeholders. Case studies include Tower Hamlets' pilot of micro-teams within general practice.	Not specified.	The overall report developed a set of core attributes of general practice. The evaluation of Tower Hamlets reported **mixed progress** with only one micro-team model achieving a significant degree of success. Early findings found that the approach could **improve safety**, **reduce GP workload by avoiding duplication** of effort and **improve co-ordination**. Lessons included: **involving patients** from the start; **engaging the whole practice team** (buy-in from all GPs was vital and staff turnover detrimental); **infrastructure** to support teams including how to manage work that fell between teams; investment in **staff training**; **external input** to support change management.
(Risi et al., 2015)	**General Practice, Tower Hamlets, UK**	Summary of a microsystem approach in general practice to address a) delays in cancer diagnoses and b) lack of continuity of care in the	Opinion piece	Five practices were initially involved. Staff were to be interviewed to monitor progress but no details are provided.	Anecdotal evidence suggests that micro-teams can bring back the best aspects of small practice working but under the protective umbrella of being part of a larger team (a newly established GP federation of all practices in Tower Hamlets). Benefits included **opportunity for peer review** of complex cases, **improved safety** through a second opinion and **emotional support** for staff.

		year preceding death in hospital.			
(Janamian et al., 2014)	The Sunshine Coast Division of **General Practice** (SCDGP), Queensland, **Australia**	Evaluation of an Improved Diabetes Management (IDM) programme. Aims included determining the role of the clinical microsystem approach in triggering the successful adoption of the programme and identifying barriers to implementation.	Qualitative evaluation with purposive sample.	Five key informants and 5 GPs.	The **identification of champions of change**, the **celebration of positive achievements** and the **use 'real data'** to demonstrate improved health outcomes for patients from the practice were instrumental in motivating participating GPs to both implement and sustain changes in their diabetes care delivery. The microsystems approach offered a **means of integrating structure, process and outcomes** of a care framework for reviewing improvements in the delivery of care.
(Michael, Schaffer, Egan, Little, & Pritchard, 2013)	**Florida, USA**, ambulatory healthcare in a county health department **Adult Primary Care Unit**.	Goals included: to identify factors contributing to long wait times; to minimise wait times; and to evaluate the impact of the microsystems approach on patient wait times, patient satisfaction with wait times and with overall care.	Quality improvement project, 8 phases. Included tracking pre- and post-test to compare wait times for waiting room wait times and examination room wait times.	Overall 1365 patients' wait times were tracked. First patient survey: 262 returned; second survey 285 returned (response rate of 42% and 47% respectively).	Mean waiting room wait time for patients seen during the post-implementation period were slightly reduced but while statistically significant, targeted wait time goals were not met. The patient satisfaction scores were significant in the waiting room wait time category (p = .029) but not for the exam room wait time. The results **support the use** of the microsystems approach (including Plan-Do-Act-Study, **PDAS**) as **viable options for conducting quality improvement**.
(Gobel et al., 2012) *Part of a larger project which studied the hospital-community interface in 6 countries.*	**Netherlands**, **hospital to community** interface.	To apply a microsystem lens to gain insights into gaps in the handover process from acute care to the **general practitioner**, and to develop recommendations for improving handovers between primary and secondary care.	A qualitative thematic analysis using a clinical microsystems lens.	28 semi-structured key stakeholder interviews (7 patients/21 professionals) that constituted seven complete microsystems (a patient, a hospital physician, a hospital nurse and GP a).	Five themes emerged related handovers: (1) lack of adequate information; (2) healthcare professionals' availability and opportunity for personal contact; (3) feedback, teaching and protocols related to handovers; (4) IT facilitated communication solutions; and (5) the role and responsibility of the patient. Comments on the lack of standardisation, coordination and training for handover were consistent. Healthcare **professionals seemed to have difficulty contacting and communicating** with each other, and **worked in isolation**. A possible explanation may be an **inability to**

					grasp the interdependencies of the system. Professionals can be proficient in their own clinical domain but may not appreciate their impact on the larger system and its impact on patient outcomes. The study offered an innovative approach to assessing and addressing the gaps between current handover practices from the **hospital to community** by viewing this interface as a **virtual microsystem**.
(Williams et al., 2009) *Same study as Williams et al (2007), below*	**England**, six National Health Service (**NHS**) sites.	To evaluate the claims made for the clinical microsystems approach of healthcare improvement within an NHS context.	Realist evaluation, six case study sites, mixed methods.	Does not specify numbers of interviews or outcome data.	The findings resonated with many of the claims for clinical microsystems, particularly that **democratic, consensual approaches to change** and improvement can be better received than externally derived initiatives with imposed targets. The microsystem approach emphasises identifying and **nurturing strengths**, of both teams and individuals, and this reinforced these positive aspects. The case study sites demonstrated **higher staff morale, empowerment, commitment** and **clarity of purpose**. However, future microsystem programmes need to address components of **patient involvement** and **process/outcome monitoring**.
(Williams, Dickinson, & Robinson, 2007)	England, **NHS**, primary and secondary care.	Two main aims were: to gain feedback on the developing role of clinical microsystems in the strategy for building local improvement capability; and to understand the value of microsystems in providing spread, sustainability and service transformation.	Realist evaluation. Six case study sites across England: genito-urinary clinic, occupational therapy service, community mental health team, cardiac rehabilitation, surgical & medical wards and	Interviews and discussions: does not specify. Outcome measures collected per site: not stated, other than that they found a 'paucity' (p14) of routine data collection.	Perceived benefits included **improved communication** within the microsystem; better **team morale**; greater awareness of the **service's function** and **individual roles** in delivering these; a shift in culture towards a more **active approach** to individual and collective improvement; and a greater capacity to **manage** externally imposed **change**. Some participants did not buy-in to the process: the reasons were unclear but included **scepticism** and disliking the terminology. The overall **focus** was on staff ('**people**') and **process** which was reflected in the relative absence of outcomes of patients and **lack of measurable impact on quality, safety, productivity or efficiency**.

			smoking cessation service.		
(Nemeth et al., 2008)	**USA, Primary care** practices	To explore the process of change used to implement clinical guidelines for primary and secondary prevention of cardiovascular disease in primary care practices that used a common electronic medical record (EMR).	Qualitative, interviews. Part of a larger process evaluation.	Purposive sampling in eight primary care practices within the larger clinical trial. Interviews with 28 staff and clinicians.	The larger study used multiple conceptual frameworks primarily that of microsystems, to inform the intervention (implementing guidelines for cardiovascular disease). Microsystems provided a mechanism to drill deeper into the meaning of the process of change and this led to a new framework for implementing change that elucidated seven concepts: 1. Vision with clear goals 2. Team involvement 3. Enhance communication systems 4. Develop staff knowledge 5. Take small steps 6. Assimilate EMR into clinical practice 7. Feedback within a culture of improvement The qualitative findings were helpful in explaining how the results of performance improvements were accomplished.
(Rhydderch et al., 2005)	NA	To inform the debate on the use of organisational assessments in **general practice**.	Systematic review of international-peer-reviewed literature.	Thirteen papers describing five organisational assessment instruments. Included Mohr & Batalden (2002), see below.	Useful comparison of **externally led quality assurance** versus **internally led quality improvement** which is regarded as a continuum relative to criteria including whose **agenda**, the **emphasis** and the **mechanism** of assessment. **Microsystems** combine complexity and systems theories by combining the principles of **measurement and feedback** to provide data to stimulate team-based solutions. The aim is to **move forward incrementally**, continually improving and therefore raising minimum and maximum standards (Mohr & Batalden 2002). However, the approach **lacks data on reliability and validity**.
Studies related to microsystems but either non-UK or not general practice					

(Pandhi et al., 2018)	A large academic health care system, Wisconsin, USA	To assess the impact of clinical microsystems approach on 1) team members perceptions of the impact at 6 and 12 months and 2) what challenges occurred during implementation and how they were addressed.	Longitudinal survey augmented by interviews and focus groups.	58 primary care teams; 204/257 individuals completed the baseline survey across all the teams (range 49-92%). Completion rates at 6 and 12 months were 45-77% and 52-81% respectively.	**Survey results** indicated improved perceptions of organizational support; team effectiveness and cohesion; quality improvement skills; and team communication. **Thematic challenges** from the qualitative data included: lack of time; need for technical support; tensions between team and clinic level change; a part-time workforce; and team instability. The findings suggested that a microsystems approach is **valuable for building team relationships and quality improvement skills** but is **challenged in a large, diverse academic primary care context**. Also suggests that primary care transformation **requires purposeful changes implemented across the micro to macro-level** including but not only focused on quality improvement training for microsystem teams.
(Gerrish, Keen, & Palfreyman, 2018)	Sheffield, UK, three discrete community services	To identify learning from a clinical microsystems quality improvement initiative to develop a more integrated service across a falls care pathway spanning community and hospital services.	Quality improvement programme using microsystems approach across the Falls Care Pathway.		Divided into three phases: developing a climate for change; implementation; and achieving change. The initiative was successful in delivering change in relation to key aspects of the pathway, engaging frontline staff and decision makers from different services. **Viewing the pathway as a series of interrelated microsystems enabled stakeholders to understand the complex nature of the pathway** and to target key areas for change. Particular **challenges** encountered arose from **organisational reconfiguration and cross-boundary working**. Recognition of the pathway operating at meso- and macrosystem levels fostered wider stakeholder engagement with the potential of improving integration of care.
(Likosky, 2014)	Australia, acute cardiac care	To demonstrate how clinical microsystems can be used to support improvement in the delivery of care, including methods for engaging teams in clinical redesign.	Opinion and case example (2002) which evaluated	The case example is described elsewhere: the impact of operative practices on mechanisms of brain injury after cardiac surgery.	Hospitals and healthcare organizations are made up of hundreds of microsystems. The challenge is to identify the microsystem(s) in which we work every day and strive to maximise their function. It is also important to consider how a given microsystem **relates to other microsystems** within an organization and its overall

					strategic aims. This approach is **an important mechanism to improve efficiency and reliability**.
(O'Dwyer, 2014)	Ireland, emergency department	To describe the implementation of a microsystems approach into an emergency department and the resultant impact on patient care.	MSc thesis using models of change	Several different strands including on-line survey with staff; SWOT analysis; and patient data.	Successfully implemented with positive outcomes for patients and staff: the microsystems improved patient care and allowed ownership of quality improvement initiatives by staff in the department.
(Gill & Gray, 2006)	Humber Mental Health Teaching NHS Trust	Description of a service improvement programme using microsystems with three community mental health teams.	Report (unpublished)	Not stated	The authors argue that microsystems were an effective method for engaging front line teams in a mental health setting. The mesosystem acts as a mediator between microsystems and the strategic imperatives of the wider NHS; gaining an understanding of both can lead to more effective working. **Mesosystems** are described as 'a semi-permeable membrane between the microsystems and the macrosystem'. **Mesosystem** regarded as the **management layer** (e.g. heads of services).
Studies appertaining to microsystems theory and/or education					
(Gerard et al., 2012)	USA, clinical nurse leader (CNL) education.	To share aspects of course development for the role of CNL and active learning experiences used for CNL development.	Discussion piece	NA	Key components of the course are described in detail including the '5P's clinical microsystems assessment. Students carried out the 5Ps and this led to a new understanding of a familiar clinical area. The principles of **collaboration** and **partnership**, integral to the microsystem approach, fitted well with the CNL role as leader of the interdisciplinary team and agent of change.
(Nelson et al., 2008)	USA healthcare system.	**Part 1** in a four-part series building on the original nine-part series on clinical microsystems in health care. Summarises lessons learned and addresses second-generation	'Lessons from the field'	NA	For a health system to work everyone in the system needs to help achieve three fundamental needs: better **patient outcomes**, better **system performance**, and better **professional development**. A **mesosystem** refers to a collection of interrelated microsystems that provide care to a shared population of patients. One role of the mesosystem is to guide

		microsystem development.			dialogue between related microsystems to achieve patient outcomes and to feed information in both directions. **Barriers** include: **lack of data** e.g. benchmarking information) which obscures performance gaps; **individual attitudes** (e.g. eschewing personal responsibility); and **resources** to engage and assist frontline staff.
(Wasson et al., 2008)	As above	**Part 2** of the above series focuses on patient needs, process improvement and routinely measure patterns of performance, and feedback data.	'Lessons from the field' and case examples	Case examples from primary care in ambulatory community settings	Exemplar microsystem will a) have as its primary purpose a focus on the **patient** b) commitment to **process** improvement including study, measurement and improvement of care and c) routinely measure its **patterns** of performance, or feedback data. Patients should be able to report that they receive "exactly the care they want and need exactly when and how they want and need it." **Barriers** to learning from micro practices include a) failure to promote **leadership**, **culture**, **organisational support**, **staff focus**, and **interdependence** of the team b) failure to develop an **adaptable** team of the right size and c) **resistance** to change or **inertia**; **regulatory approaches** based on payment by result may impede development of the microsystem.
(Godfrey et al., 2008)	Inpatient care, USA.	**Part 3** describes the transformation of two hospitals using micro-, meso- and macro-system strategies.	Commentary	Case examples from one large urban academic children's medical centre and one rural community hospital.	The development of high-functioning clinical microsystems emerged over the same time as other important changes, including the development of improvement infrastructure, the availability of outcome and process data at the microsystem level, and transparency of improvement prioritisation at all levels of the organisation. It was **not possible to single out any one individual change** that resulted in the transformation. The dialogue to negotiate improvement at all levels is the **"back and forth" between macro/ meso/**

					microsystems to find the right balance to meet the organisation goals while identifying the capacity and ability of the micro- and mesosystems to lead and spread improvement. Mesosystem leaders learnt the crucial importance of **aligning improvement goals with operational expectations**. Linked closely to sustaining the gains is how **measurement is built into the micro-, meso-, and macrosystems**.
(McKinley et al., 2008)	As above	**Part 4** describes how adaptation of the microsystem framework led to a novel model of care delivery for patients requiring elective coronary artery bypass surgery.	Mix of case description and output data over 3 years.	Case example: acute cardiac surgery.	Developed a framework which specified three key areas of focus for organisations to achieve system-level results: **system-level goals**, **local management and supervision**, and **workforce development**. Professionals from many microsystems and supporting hospital services continuously revolve around the patient. Professionals from these microsystems and services oscillate within a certain proximity of the patient during a given hospital stay. At times, the professionals and services are very close to or occur within the microsystem where the patient is receiving care, and at times the work done for the patient occurs without direct interaction with the patient. **The sum of the interactions between the microsystems, hospital services, and professionals revolving around the patient is the newly formed mesosystem**.
(Foster et al., 2007)	NA	Comparison of Baldrige criteria for organisational quality assessment and improvement with microsystems characteristics.	Discussion paper based on interviews with members of 20 high-performing microsystems.	Described in prior paper (Nelson, 2002, Part 1,)	Both Baldrige criteria and microsystem success characteristics cover a wide range of areas crucial to high performance. Those identified from a Baldrige standpoint were organisational leadership, work systems and service processes. Microsystem characteristics for success are **leadership, performance results, process improvement, and information/ information technology**.
(Mohr & Batalden, 2002)	North America	Description of microsystems, their characteristics and	Discussion paper/ description of tool based on	NA. The interviews are described elsewhere.	A clinical microsystem is a **small organised group** of clinicians and staff working together with a **shared clinical purpose** to provide care for a **defined set of**

		operational definitions, and an assessment tool.	previous qualitative research (interviews with representatives from 43 microsystems across North America).		**patients**. Use of information technology facilitates collecting, assessing, and sharing of information. Microsystems are usually part of a larger organisation and are **embedded in a legal, financial, social, and regulatory environment**. Eight characteristics were identified: • Integration of information • Measurement of process and outcomes • Interdependence of the care team • Supportiveness of the larger system • Constancy of purpose • Connection to the community • Investment in improvement • Alignment of role and training
(Batalden et al., 2003; Batalden et al., 2003; Huber et al., 2003; Kosnik & Espinosa, 2003; Mohr et al., 2003; Nelson et al., 2002; Nelson et al., 2003; Wasson, Godfrey, Nelson, Mohr, & Batalden, 2003)	**USA.** The original **series of 9 articles by the key proponents of microsystems:** 1: Learning from high-performing front-line clinical units 2: Creating a rich information environment 3: Planning patient-centered services 4: Planning patient centred care 5: How leaders are leading 6: Designing patient safety into the MS 7: The Microsystem as a platform for merging strategic planning & operations 8: Developing people & improving work life: what frontline staff told us 9: Developing small clinical units to attain peak performance (above)				The authors identified and sampled 20 of the best-value small clinical units in North America, 2000-02. The series are based on case studies to illustrate the microsystem approach. Sites were screened and selected using a self-administered survey, telephone interview, and two-day site visits for in-depth interviews and observations. There were 4 primary care practices, 5 medical specialty practices, 4 inpatient units, 4 home health care units and 3 nursing home and hospice facilities.

Appendix 2: Topic guide for general practices

WEST KENT CCG CLINICAL MICROSYSTEMS PROGRAMME FOR GENERAL PRACTICE

INTERVIEW TOPIC GUIDE - PRACTICES

Before starting the interview

- *Check whether they have any questions*
- *Go through consent and they're happy that the interview is being recorded*
- *Check whether the interview needs to be completed by a specific time*

PRACTICES THAT UNDERTOOK PROGRAMME

To start off, could you tell me a little about yourself?

1. Your role and how long you have been at the practice
2. Your knowledge and/or experience of clinical microsystems prior to the programme?
3. Your involvement in the clinical microsystems programme. How were you selected to take part?
4. Tell me about the project you were involved with.

What were your expectations for the clinical microsystems programme?

5. What were you hoping the programme would bring to the practice?
6. Why did you feel there was a need for the programme?
7. Did you feel well-prepared about what it would involve for the practice?

Was there "buy-in" to the programme?

8. Were all staff in the practice happy to be involved in the programme?
   Did this change over time?
9. Did someone in the practice have to champion it?
10. How important is the enhanced service payment for buy-in?
    Do you think it needs to be continued to sustain buy-in? Could you elaborate?

Now, on to what the programme actually involved for the practice

11. **What did the programme actually require the practice to do?**
    How much time did this take?
    What activities did you have to undertake?
    How helpful were specific tasks related to mapping the 5Ps, for example, setting global and specific aims, the fishbone diagram and so forth?
    (*5Ps: process, purpose, patterns, patients, people*)

12. **Can you tell me about the coach/facilitator?**
    How would you describe their approach?
    How important was the coach?

What was their relationship with the practice?

How often did you see them?

How did they maintain contact?

Could they have done things differently?

Finally, what value you think the programme provided

13. Were there any key ingredients that you think made the *project* successful? **OR**

Were there any key ingredients lacking from the *project* that hindered its success?

14. What aspects of the clinical microsystems *approach overall* do you think are essential?

15. How would you describe the changes the programme bought for the practice?

16. Who has benefited most from the programme and how?

17. How do you think the programme equips your practice for future challenges?

18. Would you recommend the programme to others? Can you elaborate?

19. How could the programme be improved?

Is there anything else you'd like to say about the programme?

Thank them for their time and tell them when the report should be available.

PRACTICES THAT DID NOT UNDERTAKE PROGRAMME

Before starting the interview

- *Check whether they have any questions*
- *Go through consent and they're happy that the interview is being recorded*
- *Check whether the interview needs to be completed by a specific time*

To start off, could you tell me a little about yourself?

1. Your role and how long you have been at the practice
2. Your knowledge and/or experience of clinical microsystems prior to the programme?
3. What were the reasons the practice decided not to participate in the programme?
4. What were the needs of your practice that you felt the programme could not address?
5. Were you happy with the information you received about the programme prior to making your decision?
6. Were there any particular staff who voiced concerns about the programme? What do you think their reasons were?
7. What would have encouraged you to participate?
8. Did the enhanced service payment influence your decision in any way?

Is there anything else you'd like to say about the programme?

Thank them for their time and tell them when the report should be available.

PRACTICES THAT WITHDREW (*Adjust according to at what stage they withdrew)*

1. **To start off, could you tell me a little about yourself?**
    - Your role and how long you have been at the practice
    - Your knowledge and/or experience of clinical microsystems prior to the programme?
    - Tell me about the project you were involved with and what activities you carried out up to the decision to withdraw (*probe mapping & 5Ps*)
2. **What were your expectations for the clinical microsystems programme?**
    - What were you hoping the programme would bring to the practice?
    - Why did you feel there was a need for the programme?
    - Did you feel prepared about what it would involve for the practice?
    - In what way were your expectations not met?
3. **What issues led to your withdrawing?**
    - Were there any staff who voiced concerns about the programme? What do you think their reasons were?
4. **Did you discuss your concerns with the coach?**
    - How were they addressed?
    - What was the relationship between your practice and the coach?
    - Could the coach have done anything differently?
5. **What would have encouraged you to carry on?**
    - Were the issues related to the programme or internal concerns such as staffing?
    - Can you identify any key ingredients lacking from the programme?
6. **Did the enhanced service payment influence any thinking** about joining or withdrawing from the programme?
7. **What could be changed** in the programme to make it useful for your practice?
    - How could the programme be improved?
    - Would you recommend the programme to others?

Is there anything else you'd like to say about the programme?

Thank them for their time and tell them when the report should be available.

Appendix 3: Topic guide for coaches

WEST KENT CCG CLINICAL MICROSYSTEMS PROGRAMME FOR GENERAL PRACTICE

INTERVIEW TOPIC GUIDE – COACHES/COMMISSIONERS

Before starting the interview

- *Check whether they have any questions*
- *Go through consent and they're happy that the interview is being recorded*
- *Check whether the interview needs to be completed by a specific time*

To start off, could you tell me a little about yourself?

1. Your role and how long you have been at the CCG
2. Your knowledge and/or experience of clinical microsystems prior to training as a coach?
3. How long have you been coaching in this capacity? How many projects you have facilitated? Can you describe them to me?

When you started coaching, what were your expectations for the clinical microsystems programme?

4. Were there any particular influences on the decision to fund the programme?
5. What were you hoping the programme would bring to general practices?
6. Why did you feel there was a need for the programme?
7. How did you select which GP practices to work with?
8. How were you prepared for the role of coach?

Was there "buy-in" to the programme within the CCG?

9. As a membership organisation were all CCG members happy to be involved in the programme? Did this change over time? Can you give me an example?
10. What is involved in funding this programme? What is actually being funded?
11. Were there any concerns about the enhanced service payment?
12. Do you think all commissioners understood the potential value of the programme?
13. Was there any conflict between your role as commissioner and being a coach?

Thinking about the projects you've facilitated, was there "buy-in" from practice staff?

14. Were all staff in the practice happy to be involved in the programme(s)?
    Did this change over time? Can you give me an example?
    Did you find that someone in the practice needed to champion the programme?
    Can you give me an example?
    Were you involved with any practices that withdrew? ***If yes****, ask them to expand*
15. How important is the enhanced service payment for buy-in? Do you think it needs to be continued to sustain buy-in?
16. Why do you think some GP practices resisted involvement or decided to withdraw?

Now, on to what the programme actually involved for you and practices

17. What does the programme actually require the practice to do?

How much time does this take?

What kind of activities did they have to undertake?

What do you think are the benefit of the 5Ps mapping process?

Were there any specific enablers or barriers?

18. How would you describe your approach to coaching? [*philosophy*]

What does it actually involve for you? [*logistics*]

19. How would you describe the relationship between the coaches and practices [*global*]? Can you give me an example from your own coaching?

How often do you see them when working on a project?

How do you maintain contact?

Were there any specific enablers or barriers?

Ask for examples if not forthcoming

Finally, what value do you think the programme provided

20. How would you describe the changes the programme bought for practices? Can you give me some examples?

21. How do you think the programme equips practices for future challenges?

22. Who has benefited most from the programme and how?

23. Would you recommend the programme to other CCGs? If yes, what are the "key ingredients" for the programme to run effectively? Can you elaborate?

24. Do you think that the CCG will continue to support the programme?

25. As a whole, how could the clinical microsystems programme be improved?

Is there anything else you'd like to say about the programme?

Thank them for their time and tell them when the report should be available.

Appendix 4: Information sheet for practices

WEST KENT CCG CLINICAL MICROSYSTEMS PROGRAMME FOR GENERAL PRACTICE

EVALUATION INFORMATION SHEET

You are being invited to take part in an evaluation of the West Kent CCG Clinical Microsystems Programme. We want to gather a broad range of perspectives so we are approaching you because you have either been part of the programme for some while, or recently experienced the programme, or withdrew or declined the offer of the programme.

We are a team of independent evaluators based at the Kent Academic Primary Care Unit at the University of Kent. The evaluation is being led by Professor Patricia Wilson and funded by West Kent CCG.

The evaluation plan has been reviewed and approved by the University of Kent Social Research Ethics Committee.

What will it involve?

For those practices who have experience of participating in the programme we would like to interview 3 members of your practice who have been involved in the Clinical Microsystems Programme. We are anticipating the 3 could include a GP, practice manager, and another member of the team.

For those practices who did not opt-in or withdrew from the programme we would like to interview at least 1 person from the practice involved in the decision to withdraw or not to take part in the programme.

The interview will cover your expectations and experiences of the programme, or the reasons for not taking part, and will last no longer than 30 minutes. We will conduct the interview at the practice if there is a quiet room available, or over the phone depending on your preference. We will ask people taking part to sign a consent form before the interview starts.

Will it be confidential?

With your consent, we will record the interview which will be transcribed and given an anonymous respondent identity code. It will only be accessible to those directly involved in the project. We will remove all identifiable names and your name and the practice name will not be included in the transcript, or in any quotes used in the evaluation report for the CCG or other dissemination. The recordings will be deleted when the evaluation has been completed.

What do I do next?

If you are willing for your practice to be involved in the evaluation:

- Within the next 2 weeks please email Dr Vanessa Abrahamson V.J.Abrahamson@kent.ac.uk who can answer any questions and start arranging the interviews
- Forward this information sheet to appropriate staff in your practice who have been involved in the programme.

Want to know more?

The evaluation lead would be happy to answer any questions you have:
Professor Patricia Wilson P.M.Wilson@kent.ac.uk
Direct line: 01227816093

Appendix 5: Consent form

WEST KENT CCG CLINICAL MICROSYSTEMS PROGRAMME FOR GENERAL PRACTICE

EVALUATION

CONSENT FORM

Please read the following carefully to ensure full informed consent prior to participating in the interview.

- I have read the information sheet and understand the nature and purpose of the evaluation and agree to take part.
- I understand that I have the right to refuse to answer any questions during the interview.
- I understand that I may withdraw from the interview at any stage with no consequences
- I understand that while information gained during the study may be published, I will not be identified in any material.
- I understand that the interview will be recorded and transcribed.
- I understand that all data will be destroyed after the completion of the evaluation.
- I understand that I can request access to a copy of the final evaluation report.

Participant Signature:

Print Name:

Person taking consent signature:

Print name:

Date:

Appendix 6: Information sheet for coaches

WEST KENT CCG CLINICAL MICROSYSTEMS PROGRAMME FOR GENERAL PRACTICE

EVALUATION INFORMATION SHEET

You are being invited to take part in an evaluation of the West Kent CCG Clinical Microsystems Programme. We want to gather a broad range of perspectives so we are approaching you because you have either been part of the programme coaching team, or involved in its commissioning.

We are a team of independent evaluators based at the Kent Academic Primary Care Unit at the University of Kent. The evaluation is being led by Professor Patricia Wilson and funded by West Kent CCG.

The evaluation plan has been reviewed and approved by the University of Kent Social Research Ethics Committee.

What will it involve?

We would like to interview you about your expectations and experiences of the programme. The interview will last no longer than 30 minutes. We will conduct the interview at your work base if there is a quiet room available, or over the phone depending on your preference. We will ask you to sign a consent form before the interview starts.

Will it be confidential?

With your consent, we will record the interview which will be transcribed and given an anonymous respondent identity code. It will only be accessible to those directly involved in the project. We will remove all identifiable names and your name will not be included in the transcript, or in any quotes used in the evaluation report for the CCG or in other dissemination. The recordings will be deleted when the evaluation has been completed.

What do I do next?

If you are willing to be involved in the evaluation:

- In the next 2 weeks please email Dr Vanessa Abrahamson V.J.Abrahamson@kent.ac.uk who can answer any questions and start arranging a time for the interview.

Want to know more?

The evaluation lead would be happy to answer any questions you have:

Professor Patricia Wilson: P.M.Wilson@kent.ac.uk

Direct line: 01227816093