

Evaluation of an integrated respiratory service

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Evaluation of a multidisciplinary adult integrated respiratory service in the UK

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**Abstract:**

**Rationale aims and objectives:** Care integration, particularly for patients with long-term chronic conditions has been viewed as a key imperative for service improvement over the last decade [1]. In common with other industrialised nations, major care providers such as the National Health Service (NHS) in the United Kingdom (UK) have undertaken service evaluation to identify factors for effective integrated care in the context of increasing demand but also cost-constraints. The aim of this paper is to report on an early process evaluation of a newly established Adult Integrated Respiratory Service (AIRS) in three localities in England.

**Method:** Applied qualitative methods using semi-structured interviews with clinical practitioners (n=19) plus focus group with service users (n=5). University research ethics approval was secured.

**Findings:** Despite finding staff commitment and enthusiasm for a new regional approach, as well as a very positive acclaim from service users, the study highlighted personal and organisational issues and concerns during the first four months of service implementation. The analysis revealed four inter-related themes: service in transition; resistance to change; communication; and challenges to integrated working. The findings support conceptual and organisational elements of integrated care described elsewhere [2, 3]. The role of leadership and change management in the successful implementation of integrated care is explored.

**Conclusions:** The findings from a regional adult integrated respiratory service evaluation in England highlights the potential of collective leadership with authentic involvement of all stakeholders to effect successful change to build locally owned models for integrated care. Further longitudinal research would yield valuable insights as the service evolves.

**Key words:** chronic respiratory disease, qualitative research, integrated care, process evaluation, transition

**Introduction**

As health care systems internationally introduce reforms to manage increasing demands and costs whilst maximising effectiveness, the potential of integrated care is reflected in current health care policy [2, 4]. Integrated care has been defined as 'The management and delivery of health services so that clients receive a continuum of preventative and curative services, according to their needs over time and across different levels of the health system' [1]. Integrated care is considered to provide three benefits, better value for money, reduced replication through care coordination and improved long-term care for those with chronic health conditions [4], such as Chronic Obstructive Pulmonary Disease (COPD), notably by reconfiguring care around the client as opposed to health disciplines and systems [5].

Within the UK, COPD is the fifth major cause of respiratory morbidity with approximately 25,000 people dying from COPD in England each year [6, 7] and 16,000 of these deaths within 90 days of admission [7]. In 2008 in the UK premature mortality from COPD was almost twice as high as the European average and yet it was estimated that 90% of COPD deaths were linked to preventable factors [6]. In addition to this an estimated two million people have untreated or undiagnosed COPD [8], with research indicating that between 10-34% of the 115,000 annual emergency admissions for acute exacerbations occurred in people who had not been diagnosed [7]. The exact prevalence of Bronchiectasis is unknown [9] and yet it is one of the major causes of respiratory morbidity [10] with management of this patient group being poorly defined [11]. This is similar to Pulmonary Fibrosis where current management only provides marginal benefits [12]. In the UK the median survival rate

from diagnosis for people with Pulmonary Fibrosis is three years, but 20% can survive for more than five years [13]. Therefore, due to COPD often being under-diagnosed and Bronchiectasis and Pulmonary Fibrosis lacking a defined management plan, the patient experience can be poor with frequent hospital admissions and associated economic and emotional costs. The management of these chronic respiratory conditions are complex and necessitate excellent coordination to effectively use resources of the inter-professional and inter-organisational teams to maximise health outcomes, not least patient satisfaction.

A review of service provision commissioned by the regional Clinical Commissioning Group (CCG) in southern England revealed that although each locality-based service shared the same overall aim, they were configured differently due to local health service provider priorities and service structures. The different service approaches adopted by the three localities included: 1) early supportive discharge and hospital avoidance service (outreach model with intermediate features); 2) early supported discharge service (outreach model); and 3) respiratory early discharge service (outreach model). This led to inequalities in respiratory service provision across the county, which did not address the needs of all respiratory patients, carers and service providers [14]. Hence the CCG recommended the formation of a region-wide Adult Interated Respiratory Service (AIRS) operating from three hospitals across the area. Service aims included to improve patient experience and outcomes; integrate a seamless provision of care for patients, ensuring that services work jointly across the health and social sectors delivering a new and improved model of care with excellent patient-centred communication [14]. A clinical education programme for community nurses and General Practitioners (GPs) was included in the early implementation phase.

Service reconfiguration to facilitate integrated care is a key priority of the National Health Service (NHS) in England [7] with an imperative for speedy implementation, so the need for early process evaluation is vital [15]. However, evaluation is rarely undertaken by an independent research team with findings often published in reports rather than peer-reviewed journals [16]. Independent service evaluation informed by traditional research can be more effective in bringing about important change within the health care service, being closely associated with real world issues encountered by policy makers and clinicians [17, 18]. This paper presents findings from an independent early process evaluation of a newly established AIRS in three localities in England four months following service implementation. A process evaluation focuses basically on what system of care is designed to do and provides insights into the strengths and limitations of new approaches [2]. At this early stage of implementation qualitative evaluation tools were best suited to gain an understanding, notably of issues of organisation culture and integrated care delivery [2]. This paper is limited to the qualitative findings obtained during the study.

### **Conceptual framework**

The elements needed to establish or expand integrated care in the context of effective change management lacks clarification [2, 3]. Focusing on integration between primary and secondary care in Australia, de Jong and Jackson [2] argue that the 'ingredients' to ensure that care is integrated from the perspective of the health care organisations and service users, depend upon three inter-related elements: (a) communication and access, (b) culture, values and teamwork and commitment; and (c) incentives to deliver integrated care. Further it has been argued that improved care coordination may not be effective due to a lack of sufficiently comprehensive measurement instruments [19], coupled with an insufficient understanding of the linkage between key concepts that underpin care coordination [3]. Building on previous literature and research in Belgium, van Houdt and

colleagues [3] developed a theoretical framework for the study of care coordination. In total 15 key inter-related concepts are identified and linked to five overarching factors: external factors such as health policy; patient characteristics, including coping strategies; (inter)organisational mechanisms, including structural and cultural factors; relational coordination between care professionals and with patients; outcome both for patient and teams. Together these conceptual and organisational elements been validated in a systematic review of instruments to assess integrated care [19], and thus provide a guiding framework for our study.

## Methods

This study aimed to analyse the experience, expectations and views of patients and AIRS staff during the integration of three separate systems of care delivery into one model, by posing the following evaluation questions:

1. What are the experiences of staff involved in the implementation of AIRS during the first four months of its transition?
2. What are the experiences of service users (that is patients and informal, usually family, carers) as service delivery moves from a local to a regional integrated respiratory service?

University research ethics approval was secured and data collected across December 2014 through January 2015. Qualitative data collection involved two methods: one focus group with respiratory service users (N = 5) and individual (semi-structured) interviews with AIRS staff (n=19). The focus group lasted one hour, the interviews between 20 and 50 minutes; members of the study team conducted the data collection. Interview and focus group guides are shown in figures 1 and 2. All data was audio recorded and field notes taken. Data were transcribed and de-identified.

*<insert figs. 1 & 2>*

Data were analysed using thematic content analysis [20]. Study team members reviewed transcripts for accuracy and worked in pairs to develop initial codes and sub-themes based on the evaluation questions and the study's conceptual framework. These were then shared with the full team and through an iterative process, a coding framework evolved and the final themes and sub-themes emerged.

For the purpose of this paper staff are referred to as AIRS participants and patients/carers receiving care, as service users. The former provided a representative sample from the three localities and professional groups – doctors, nurses and physiotherapists. All service users had experienced or cared for a patient with a diagnosis of severe COPD. Table one summarises the participants' characteristics and method of data collection.

*< insert table 1>*

## Findings

The analysis revealed four inter-related themes and 11 sub-themes (Table 2). The four themes comprise: service in transition; resistance to change; communication; and challenges to integrated working (Figure 3).

*<Insert table 2>*

*<Insert figure 3>*

### Service in transition

This theme reveals that the impact on staff of service change was challenging, especially for those not involved in planning at a strategic level. Nonetheless the findings showed that staff remained enthusiastic and strongly committed to the respiratory service and its users. Interestingly service user data indicated a lack of overall understanding of the service changes.

AIRS participants identified early benefits of service reconfiguration in terms of service expansion to provide a more consistent provision across the region including improved services for oxygen assessment; the provision of intravenous antibiotic services; follow-up clinics for physiotherapy; and the potential to improve assessment and diagnosis of respiratory patients:

*Yes, what is much better is being able to offer a service environmentally wider, also being able to offer it to more types of respiratory patients, being able to give more support. (Staff participant 15 (S15))*

Whilst many staff seemed optimistic that it was *'going to be a better service'*, it also impacted on their workload, including *'taking on more roles'* (S8). Not all AIRS participants felt positive but described feelings of being *'railroaded'* into delivering the new service too quickly before all the structural systems were in place:

*'We have had an injection of money but the resources are tight and it may be that we will struggle to deliver all of the outcomes required. (...) We will get there but it won't be an easy task. (S7)*

The rapidity of service reconfiguration seemed driven by linked project grant funding from regional health service commissioners. One consequence was that informing wider respiratory staff inside and out of hospital of the new service was inadequate, leading to inefficiencies and concerns:

*... other members of staff working in the hospital ...they don't know who we are. Just because of this we might not get some referrals, or they might not know what we do (S5)*

Similarly plans to implement shared and standardised documentation across AIRS localities was unable to be implemented prior to service commencement leading to concerns that service users might *'get confused'* (S6), as well as being a barrier to integrated care and making overall service audit unreliable:

*I think it's very frustrating, trying to agree the paperwork... We need a degree of standardisation but these things can take a long time to agree and resolve. I think this has been a barrier... we have three acute trust providers [hospitals] who work in very different ways trying to find common ground. (S10)*

However the data indicated that whilst challenging for the staff the rapidity of service transition was less of concern for service users:

*There are more people you know... now I'm seeing people I don't know. [but] It's as good as it ever was - the service I mean. (Service user participant 2 (SU2))*

Due perhaps to a lack of information however although one service user worried that that eligibility criteria might change:

*Some people worry about what AIRS is but the only concern that I've got is - will AIRS be available for me when I want it...If I phone up in October after I've had a good summer will they say "Well X you're no longer eligible" (SU1).*

However staff stressed that regardless of changes, service users were still able to refer themselves for assessment and support and indeed this had been enhanced in the new service:

*... the patients have now got a kind of one stop shop, obviously, if they'd been to any other sort of respiratory clinic before, they would have been discharged and that was that. Where now these people are told that once they've been through the [AIRS] service that hey are welcome to phone up for advice. (S15)*

This reflects a highly person-centred approach greatly appreciated by service-users for whom anxiety significantly affected well-being:

*...they go beyond what is expected, (...) they've always been there for me. (SU1)*

*Sometimes you are a bit out of puff; you just want someone just to talk you through because I'm on my own. I do get a bit frightened. (SU5)*

Indeed both AIRS participants and service-users identified that more structured psychological support for managing their respiratory condition would be beneficial enhancement to the new service:

*...the only thing I think is missing from [AIRS] is something to do with stress or anxiety and I suffer terribly with stress and anxiety, I think they could have somebody attached to that. (SU2)*

### **Resistance to change**

This theme highlights AIRS participants' experiences of resistance to service changes from community matrons and (non-AIRS) respiratory nurse specialists. Problems around discharge planning in relation to specialist nurses seemed linked to a lack of shared understanding of each other's roles, whereas community staff resistance was perceived as due to the adoption of an outreach as opposed to an in-reach care model:

*We've had some resistance from some members of the primary care team. They feel that the service should have been evolved from primary care not secondary care. It's individual resistance not institutional resistance. (S7)*

Organisational difficulties encountered when setting up and running services across a wide catchment area caused further conflict:

*Uptake from the community is not as good as hoped. People are not prepared to take on this sort of integrated role as well as we had hoped... probably a need for more education ...they need to be on board and take responsibility for these patients... (S14)*

### **Communication**

This theme focuses on factors affecting communication between AIRS participants, community services and service users. From an organisational perspective, AIRS nurses and physiotherapists described having good working relationships with the respiratory consultants but some tensions existed between AIRS staff and GPs:

*The fact that the consultants in the three hospitals get on well together, (...) if we could foster this way of working, more collaborative way of working ...people feeling less territorial and defensive; then that would be enormously helpful. (S13)*

To facilitate inter-organisational communication, a new single point of access (SPOA) communication system was introduced as part of service transition. Some staff

questioned the validity of the system while others saw SPOA as a useful tool that offered an audit trail for the referral process:

*Historically we've always enjoyed quite a good working relationship with the community matrons and we've been able to take informal phone calls, advising informally... But because the process of referral is now formal [SPOA] (...) it's now thrown up a little bit of obstacle and people don't want to use it (...) but the beauty of it is because it's single point it's documented, it's centralised and the same process happens in all sites. (S7)*

The potential for improved inter-locality communication also seemed evident from the data. For example IT systems were incompatible between localities and represented a considerable challenge:

*... if the AIRS team had a system whereby they were able to enter what they'd been doing, and then we can see what they've been doing, but we don't even have that really. I know nothing unless somebody tells me. So I think that's a massive barrier to integration. (S17)*

Perhaps understandably given the history of independent teams, staff tended to look inward for support and education as opposed to across localities even though there was the potential to develop a culture that capitalised on the different skill mix across localities:

*Other than the team leader nobody else has really had any contact with anybody else in any of the other teams. We don't ... we've not met, we've not all gone to one place at one time and say, "oh hi, I am" ... that's not happened. (S7)*

However levels of clinical experience and expertise in the three localities varied and included a number of staff that have recently been appointed and were less familiar with their roles. For some AIRS participants the volume of change and learning has led to feelings of anxiety:

*We've been sort of thrown in and we're taking over a service that we haven't got that much experience in (...) but that's a bit scary, you know, actually looking confident and being comfortable with patients when you, you feel if you haven't got enough knowledge. (S2)*

*I do feel overwhelmed sometimes, which I find difficult. And then there are other times where it's all going really well and absolutely loving it and... I think that's the nature of this type of job, really. (S1)*

AIRS participants described having increasing amounts to learn about specific respiratory conditions though 'on-the-job' learning and seeking opportunities to attend relevant courses and study days. Whilst educational needs were being addressed this was isolated in localities:

*I've been very lucky; in my first four months my brain has nearly exploded with education and information! (...) I will be honest with you if I don't know something, and they've sorted it. (S16)*

In parallel, up skilling and education for community colleagues was an important element of communication to enable effective joint working for continuity of care within an integrated service.

*We have developed a three-day educational programme for community practice nurses and community matrons and those practitioners in the community; to increase their skills in the management of COPD; in the management of Bronchiectasis and interstitial lung disease. ... We had some very good feedback. (S13)*

### **Challenges of integrated working**

This theme highlights the amount of progress made towards the integration of AIRS. In terms of benefits, AIRS participants reported that the consultants in the various localities were offering more support within the new system, specifically interdisciplinary involvement with referrals and multidisciplinary team meetings (MDT):

*I think what's different from before is we have far more support from the consultants than what we did before, just from a point of easier access. We, also, can refer them into an MDT if we need to. We're quite close to the TB nurse, to the respiratory physiologist, the respiratory physiotherapists and we're much more closely linked now. (S1)*

Whilst there were increasing opportunities to collaborate with some of the in-hospital respiratory specialist teams, this was yet underdeveloped in terms of providing provide a more seamless service:

*In theory the AIRS is about adult integration respiratory services but in this hospital the respiratory service, the respiratory nurses are a bit of a separate limb. (S11)*

However when considering AIRS as an integration of the three local respiratory services, the findings revealed that this was not a shared perception, apart from at the level of team leader. Staff describe the three sites as having very different philosophies and management styles. Some described feeling protective of their own team (S1) and highlighted that they felt integration would come with shared documentation:

*We're not particularly, at the moment, seeing a cross-boundary integration of patients, but we are trying to ensure that we're using the same paperwork, and working to deliver the same service, even if in slightly different ways (S15)*

### **Discussion**

This early process evaluation has provided valuable insights into the strengths and limitations of a new integrated approach to adult respiratory service delivery. The qualitative findings in particular have highlighted issues of organisational culture and integrated care delivery and have resonance with existing literature on implementing integrated care. Drawing upon the guiding framework for the study, our discussion starts with the conceptual and organisational elements of integrated care described by de Jong and Clarkson [2] and van Houdt et al. [3]. It will conclude with a discussion of change management and service transition.

### **Communication and access**

Supporting other literature [2, 3] our study found that successful integrated care is predicated on the quality of relationships between all service providers and service users, one of mutual respect and trust. Despite experiencing significant challenges, AIRS staff prioritised the patient experience by establishing protocols for a successful 'one stop shop' for service users to access the service based on their holistic needs rather than fragmented care when planned around of organisational structures [5]. For those diagnosed with COPD this was particularly important as the focus group indicated patients' anxiety associated with symptoms was reduced and coping strategies were promoted through ease of contact with knowledgeable staff. This was provided despite an expansion in the service and new staff through contact cards



and self-referral mechanisms, as advocated by service user groups as fundamental during service reconfiguration [21].

Further it is argued [3] that relational coordination between professionals needs to be based on mutual respect and collaboration to facilitate integrated care. The study findings reflect this conclusion; within each AIRS locality effective inter-professional communication and collaboration between physiotherapists, nurses and doctors was established and perceived as facilitating joint problem solving to streamline practice. Less successful was the identification and implementation of appropriate information management tools [2] to support this activity, both across AIRS localities and between AIRS and hospital and community based respiratory care providers. The lack of compatible IT systems for example meant that information about patients on the boundaries of localities could not be readily shared in a rapid and interactive way and also inter-team communication difficult. Added to this the delayed introduction of joint guidelines, undermined the potential of inter-locality working. These structural factors ideally should be addressed pre-service implementation to avoid the staff frustration evident in the findings as well as the loss of the potential for wider collaboration for staff support and education.

### **Culture, values and teamwork**

Central to an integration culture is trust and respect for other care providers [2] facilitated by inter-organisational mechanisms [3]. This involves shared values around the nature and benefits of integrated care which requires clinical and policy champions, supported by joint policies and procedures. This 'whole system' approach is challenging given the complexity of care and diversity of care providers [5]. The AIRS teams shared joint service aims and this was enhanced by regular liaison at lead level. However the teams were 'housed' in hospitals with differing funding mechanisms and organisational structures. This seemed have been underestimated in planning the service, leading to a lack of involvement with other providers of hospital respiratory care, with the result that care providers lacked insight into each others roles, leading to inefficiencies in provision as well as strained working relationships. Whereas involving community providers was evident through the provision of sessions about the service plus clinical education concerning COPD management. Less consideration seemed to be given to the impact of structural change: busy community practitioners who are generalists rather than respiratory specialists with many other priorities, were perceived as reluctant to take responsibility for on-going care management, preferring to refer on-going issues back to the specialist service as happened previously. Equally community staff valued the personalised staff contact associated with the old structure making them less willing to adopt the SPOA approach. Further the whole respiratory care pathway was not managed by one organisation and therefore responsibility was dissipated. From the perspective of whole-system quality improvement, no mechanism existed to openly share all stakeholders' perceptions of the service on an on-going basis. Addressing such inter-organisational factors may facilitate a wider integrated care culture [2, 3].

### **Commitments and incentives to deliver integrated care**

Clearly for integrated care to become a reality requires belief in its benefits but also requires to be a key facet of work structures and roles [2]. This was not evident in the study setting, but it was a main strategic intent of the regional clinical commissioning group. Significantly funding was allocated to the hospital outreach service and did not consider resource implications for related organisations. External factors are

relevant [3] because they act as incentives but also provide motivation towards successful integrated care. The study findings indicated that the AIRS were being judged against team and patient outcomes around integrated care. Whilst this engendered commitment, the rapid implementation of service change also caused stress as AIRS participants tried to cope with educational needs and role development whilst managing the on-going care workload.

Inter-organisational outcomes were less focused; 'buy-in' to AIRS from GPs and community nurses as well as hospital specialist nurses was less evident, perhaps due to resourcing factors but also perhaps because they were not fully involved in the planning for integrated care, which may have contributed to some resistance to service change.

### **Responding to change**

Whilst the findings are reflected in the wider literature, one central issue dominates the findings from this study: the impact of change on both service users and providers. Rapid service reconfiguration is a feature of many health systems in industrialised countries [1, 4], but the complexity of integrated care is particularly challenging. AIRS is in the early stages of change; the process issues to emerge from the data that participants experienced as part of service transition can be visualised in terms of drivers and barriers to change (see Table 3).

<insert table 3>

The qualitative findings represent the participants' personal and emotional responses to service improvement after four months into the change process. The concept of an emotional cycle of change [22, 23, 24] describes how emotions of participants fluctuate between highs and lows as they progress through the change process. This proposes that the process usually begins with a high, as the perceived benefits of change are anticipated. However, as participants begin to recognise the full implications of moving from a position of safe and established practice towards new territory, feelings of uncertainty, doubt and anxiety begin to emerge. These processes are clearly illustrated from an individual perspective in the two themes identified in our study: communication and challenges of integrated care. This is illustrated at an organisational level in the remaining themes: service in transition and resistance to change (Figure 3). This process can be considered to be a healthy response to change; participants need to feel discomfort in order to recognise, learn and respond positively to change [17]. Providing support and respect for individual concerns is important at this stage as this encourages participants to avoid high levels of anxiety and facilitates movement towards 'hopeful realism' [22].

<insert figure 3>

A recent UK government report [25], advocated transformational change as central to successful integrated care. Leadership is key in this process, not based on authority but rather mobilising everyone using and providing services to become change leaders by connecting ideas and knowledge. However the dominant approach to leadership, relying on positional authority, is prominent in the NHS and fails to capitalise on the power for change through connection and ability to influence throughout the system through networks. It is argued [25] that traditional planning logic underpinned by data has been the mainstay of change management in the NHS in the past. Whilst these remain vitally important, they are not the whole story: It is argued that change agents need to make an emotional connection with those

affected by the change. This starts with making clear the values underpinning the new approach and drawing upon people's desire to take action to make these a reality of the new service. This means telling but also listening to ideas from the 'grass roots' to create novel approaches to change. Creating systems for a meaningful dialogue with those using the service (staff, patients, carers) enables change agents to respond to the lived experience of the service, thereby strengthening stakeholder buy-in. Successful change in an emergent approach can be measured by the quality of relationships, their foundations and commitment towards the common cause of delivering a particular approach.

### **Strengths and limitations of the study**

This early process evaluation provides a rich insight into the experience, expectations and views of patients and staff of AIRS from three localities in southern England. This independent evaluation in collaboration with major stakeholders, focused on process, informs future service development. The findings serve to validate recognised conceptual frameworks concerning the elements of integrated care.

This is a small study using qualitative methods based in one area of southern England. Transferability to other settings may be possible. The study sponsor set the parameters for data sampling and therefore the findings are limited by not sampling the full range of stakeholders involved in COPD care. Service user involvement was more limited than planned due to the timing of the study at the peak of COPD exacerbations associated with winter weather in the UK.

### **Conclusion**

The aim of the evaluation was to determine the experience, expectations and views of service users and staff of a new Adult Integrated respiratory Service in one region of England. The evaluation revealed widespread staff commitment and enthusiasm for a collaborative approach to respiratory care provision as well as an overwhelmingly positive acclaim for the staff and service from service users. Analysis of the study's findings supports evidence from elsewhere and highlights the potential of collective leadership with authentic involvement of all stakeholders to effect successful change to build locally owned models for integrated care. Further longitudinal research would yield valuable insights as the service evolves.

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*Table 1: Characteristics of participants by data collection method*

Method	Participants and their involvement with the respiratory service	Number
Interviews	AIRS Lead and associate lead nurses	5
	AIRS Registered Nurses working	6
	AIRS Clerical Managers and Health Care Assistants	2
	AIRS Physiotherapists	3
	Medical Staff with a responsibility for AIRS	3
Focus Group*	Service users (patients with COPD and carer)	5

\* Data collected from one participant via telephone as unwell on the day

*Table 2: Qualitative analysis: Summary of themes and sub-themes*

Theme	Sub-themes
Service in transition	Knowledge of the reconfigured service
	An evolving service
	Service-user satisfaction
Resistance to change	Perceived Resistance
	Financial support
Communication	Communication processes
	Geographical spread
	Education as communication
Challenges to integrated working	Within hospital
	Community
	Between the localities

*Table 3: Drivers and barriers for change emerging from the data*

Drivers that have supported change	Barriers to implementing the change
Increase in the number of new staff	A lack of knowledge and understanding of DAIRS by patients and wider service users
Oxygen assessment	No official launch of the service
Intravenous antibiotic services.	Lack of implemented inclusion and exclusion criteria
Follow-up clinics for physiotherapy	Lack of implemented DAIRS official documentation e.g. patient ID cards
Potential to improve assessment and diagnosis of respiratory patients	Rapid implementation
Strong medical support from consultants.	Perceived resistance from community services
Feeling well supported within local teams	Challenge of integrating DAIRS with other in-hospital respiratory services
Educational support for the DAIRS teams	The perceived need for IT resources
Educational support for community staff	Perceived differences in funding
Positive service-user satisfaction	

## Figures

### Figure 1: Interview guide

#### Opening questions:

- What is your job title?
- How long have you worked with patients with respiratory conditions?
- Have you worked under the previous system of respiratory care in this locality?
- Have you worked in similar systems elsewhere in the country?

#### Focusing on the new service:

- Please can you give an outline of the new service
- What is your role in the new service?
- What is different about the new service?
- What do you think is better about this service than the previous service (or similar services you have worked in before)?
- What do you think needs to be improved about the new service?
  - **Prompt:** Have you experienced any barriers to implementing the service from your perspective?
- A key word used in the title of this service is “integrated”. How does integration work in your locality?
  - **Prompt:** How well does communication work in your locality?
- What do you think the patients you have met in your role feel about the new service?
  - **Prompt:** Do you think they all share similar views?
- Are there any points or issues about the new service you feel we have missed?
  - **Prompt:** Is there anything else you would like to add?

### Figure 2: Focus group prompts

- Ask participants to identify how long they have accessed local respiratory services
- Explore any comparisons with service provision elsewhere.
- Explore what services they access and their perceptions of these
- Ask about perceptions of the new AIR service
- Ask about experiences and examples of integrated respiratory care
- Are there any points or issues about the new service you feel we have missed or would like to add?

**Figure 3: Diagram representing themes**

