Final Report for Closing the Gap through Changing Relationships (award holders)

Project Title: M(ums)-Power
Project Lead: Prof. Donald Peebles
Lead Organisation: University College London (referred to as UCL)
Partner organisations (at the time of project closure stage)**:**

- Innovation Unit (referred to as IU)
- University College London Hospital (referred to as UCLH)
- Barts Health NHS Trust (referred to as Barts Health)
- University College London Partners (referred to as UCLP)
- Anglia Ruskin University
- Concentra

Additional partner organisations (at the time of the award application stage):

- Mumsnet
- NHS North Central London Commissioners
- Camden Social Enterprise
- North East, North Central London and Essex Health Innovation Education Cluster
- Tribal Education Ltd
- Microsoft

Abstract

Having a baby in England has never been safer – but during the last decade antenatal care services have become increasingly overstretched and in need of a radical overhaul. The wider changes in the health-care system, such as the move towards maternity pathway tariffs, mean that these challenges are likely to become more acute over the coming years. The M(ums)-Power project aimed to address these challenges by empowering women to take ownership of their pregnancy and, in so doing, move away from being passive recipients of services to being active partners in their care. A series of co-production workshops with clinicians and new mothers provided rich insights into the users' and professionals' experiences of antenatal care services and these insights were used to develop the project interventions. On the back of these workshops, we tested group appointments at two points in the antenatal care pathway – at booking and at 16 weeks. Group appointments were tested with over 120 women at UCLH and Barts Health using the Plan Do Study Act service improvement methodology. Whilst these interventions were being tested, technology solutions to support group appointments were co-designed with users and health professionals. This gave rise to the MyPregnancy Journey information website and the MumsTalk social networking platform, which were developed and prototyped with health professionals and pregnant women. The blend of front-line service improvement and technology enablement helped to establish the M(ums)-Power case for change, which aims to make ante-natal services (i) more positive, and therefore personalised around women's needs; (ii) more prospective, bringing about greater integration between ante-natal and post-natal services; (iii) more empowering for pregnant women; and (iv) more connected, and technologically enabled.

1. Introduction

1.1 Background Knowledge

At the start of the programme antenatal and maternity services in the UK had never been safer, with low maternal and neonatal mortality rates. However, services were under strain. A 22% rise in birth rates from 2001 to 2011 and a rise in older mothers and mothers with comorbidities resulted in a national shortage of midwives. One in four maternity units in London had too few midwives. In addition to strains on the system, Maternity Matters (2007) argued that women needed more choice about where they receive care and give birth, that earlier access to maternity services needs to be supported and that continuity of care (seeing the same midwife throughout your pregnancy) was the gold standard of care. This reflected concerns about the person-centredness of services, inequalities in services, inefficiency of services and the medicalization of services.

Continuity of care was seen as the gold standard of care "because you're [service user] with different midwives and doctors at every appointment, you don't really build up a relationship with any of them […] you're another patient […] and another number really."[1] 57% of women nationally said they had seen the same midwife most or every time in the 2010 CQC maternity survey.

Evidence from the CQC maternity surveys suggested that services were not adequately tailored and personalised to give all women the information they needed during their pregnancy. 20% of women did not feel they were offered an informed choice about their screening test and 21% of women claimed they were not given enough information about the emotional changes they might experience following the birth. Women did not always seem to understand the antenatal care pathway: "[it] would be really good to have a whole picture of what was going to happen with the pregnancy, everything to do with it."[2] Midwifery staff also recognised the systems failure to provide person-centred care with 20% of maternity staff disagreeing with the statement "*individualised care is provided for women receiving our service*" and 60% only partially agreeing.[3]

Mothers' experience of maternity services and pregnancy and child health outcomes reflect underlying socioeconomic inequalities. Women from the most deprived communities were 5 times more likely to die in pregnancy than women from the least deprived areas and their babies had poorer outcomes.[4] Ethnic minority women, single mothers and those with a lower level of education were also more likely to access services late[5] and report poorer experiences of care. These inequalities are also reflected in child health outcomes - babies born in the most deprived areas were up to six times as likely to die in infancy.[6] There was a growing appreciation that antenatal care and postnatal care should be about more than just avoiding medical risk, but also

[1] Maternity Alliance, Born in the UK, 2007.

[2] Recent mum, Somali, 31 years.

[3] Healthcare Commission, Towards better births: A review of maternity services in England, 2008.

[4] Sarah Fisher, Social inequalities in maternal and perinatal mortality, New Digest 44, 2008.

[5] Rachel E. Rowe and Jo Garcia, 'Social Class, Ethnicity and Attendance for Antenatal Care in the United Kingdom: a Systematic Review', Journal of Public Health 25, no. 2 (6 January 2003): 113–119.

[6] V. S. Raleigh et al., 'Ethnic and Social Inequalities in Women's Experience of Maternity Care in England: Results of a National Survey', JRSM 103, no. 5 (5 January 2010.

about "*giving every child the best start in life is crucial to reducing health inequalities across the life course.*"[7]

At a strategic level there was a movement towards de-medicalising pregnancy. This is reflected for example in: an increase in midwife-led birth centres, the promotion of self referrals for midwifery-led services, the drive to reduce C-sections and the desire to avoid unnecessary appointments. There was evidence in North and Central London that the system was inefficient with 71% of pregnant women in Camden having more antenatal appointments than recommended by NICE guidelines.

1.2 Local Problem and context(s)

The interventions were deployed at two sites – University College London Hospital (UCLH) and Bart's Health (first at Newham University Hospital (NUH) and then at the Barking Birth Centre). In the original application to the Health Foundation there was also a third site in Essex but this remained outside the scope of the project. At both sites the interventions were deployed in antenatal clinics, but the sites differed both in the populations they serve and the type of care that they provide.

UCLH is a large central London hospital which sees 5,200 births per year. Antenatal care with UCLH takes place both in the antenatal clinic in the hospital and in community settings. Our work was primarily based within the hospital in their integrated antenatal services (the antenatal clinic, ultrasound and foetal medicine) which serves 6,000 women annually.

The hospital's catchment area is North and Central London but 46% of incoming referrals come from outside this area. Women who live in the catchment area and have no additional medical or social needs, are most likely to receive the majority of their care in community settings such as Children's centres. Women with additional needs or who live outside the catchment area will have their care in the hospital. Being a hospital based antenatal clinic there are a range of clinical and non-clinical stakeholders at the site including midwives, healthcare assistants, obstetricians and service managers.

The CQC 2010 maternity survey found that the women who gave birth at UCLH were not being provided with adequate information about scans, homebirths and Down's syndrome screening during their antenatal care – for all of these questions it came in the 20% of worst performing trusts. The trust scored highly, however, on staff training and user involvement in service planning.

The Bart's Health merger occurred during the project life-cycle in April 2012 when NUH, Bart's and Whipps Cross merged – across the trust there are now 14,800 births per year. Bart's Health serves a diverse population across East London including much of Newham and Tower Hamlets which are the 6th and 3rd most deprived boroughs in the UK respectively. Compared to UCLH the women who receive antenatal care within Bart's Health are more likely to come from deprived areas and not have English as a first language.

[7] Department of Health, Maternity Matters: Choice, access and continuity of care in a safe service, 2007.

The project was delivered across two sites in Bart's Health. Testing of our interventions initially occurred in the antenatal clinic in Newham University General Hospital but because of operational difficulties, including inflexible booking systems, it moved to the Barking Birth Centre. The Barking Birth Centre is a community-based midwife-led centre and as such the main stakeholders here are the midwives, service managers and healthcare assistants – there are no doctors based on site.

Both UCLH and Barts Health continue to face a number of workforce related issues which make front-line engagement and wider change a challenging proposition. One of the supervising midwives at UCLH noted:

"Motivation is sometimes of a challenge for staff. The nature of staff means it is challenging. They are not the newly qualified energetic midwives working in ante natal. [I] heard one midwife who came down from the ward saying 'I really don't like ante natal'. It is seen as a dead end, grave yard area to work. Not many people want to rotate through" (supervising midwife, UCLH).

1.3 Intended Improvement

Overarching aim

The original aim of the M(ums)-Power project was to "change the dynamic between women who are pregnant and providers of maternity care" through a "culture change programme and a patient relationship management approach that places the needs and preferences of women at the centre of antenatal care."[8] The challenge and solution to meeting this aspiration was the development and deployment of an electronic patient management record that would allow pregnant women to access their clinical files, book appointments, and engage with health professionals in a more technologically enabled fashion. It was anticipated that the existing patient relationship management system co-developed by UCLP for use in paediatric diabetes would be used as a framework for the technical development of a solution. The original aim of the M(ums)-Power project was therefore ICT-driven.

The revised project scope[9] retained the focus on putting pregnant women at the centre of antenatal care, but led to a reframing of both the challenge and the solution at hand. New perspectives provided by pregnant women and a myriad of health professionals engaged during the co-production process, pointed to patient enablement as a critical vehicle to realising this aspiration (see the 'co-design workshops finding report, section 5.2). This was to be achieved by providing pregnant women with information that was more closely aligned to their needs/concerns, and providing them with opportunities to engage with one another in a meaningful way. The key operating principles to achieving the original M(ums)-Power vision were now, as a consequence, centred around (i) patient empowerment, (ii) peer enablement, and (iii) technology enablement. This was to be realised through a mixed approach of front-line service improvement testing and technological development. The revised approach to the original aim of the M(ums)-Power project was therefore enabled by ICT as well as service improvement.

Theory of change

[8] Section 2, sub-section 8 of the original THF application, April 2010, p.5.

[9] Associated with the departure of the chief ICT partner, Tribal Education Ltd. in August 2011.

The abovementioned change in project scope led to the reframing of the theory of change (figure 1) and, in so doing, provided the basis for reconciling the wider aim of the project with two quality domains that were considered to be most pertinent: improved service effectiveness and person centeredness. The primary question of being the project aimed to address can be articulated as follows:

- What are the key drivers and enablers contributing to patient empowerment and peer enablement across ante-natal services?

This revealed a sub-set of the following secondary questions that informed the key lines of enquiry across the co-production phase:

- What is the role of technology in facilitating peer enablement?
- What is the role of technology in facilitating patient empowerment?
- How can information be provided in a more effective manner that genuinely targets the needs and concerns of pregnant women?
- What is the most effective method of establishing physical connections between women during the early stage of their pregnancy?
- What are pregnant most anxious about at an early stage of their pregnancy, and how can peer enablement and patient empowerment be configured to address this?

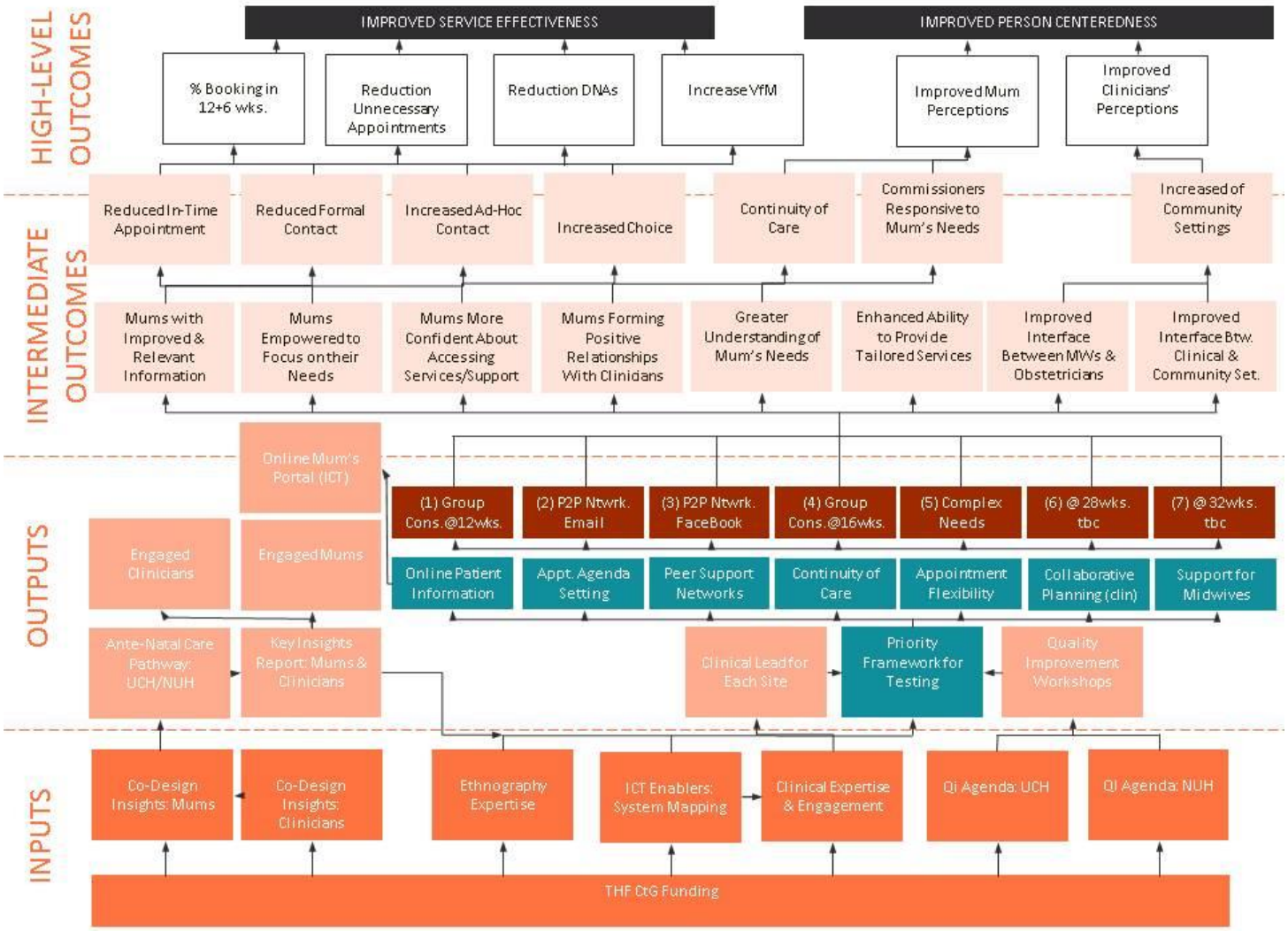


Figure 1. *M(ums)-Power logic model (January 2012).*

Co-production and prioritisation

This proved to be a critical milestone in the M(ums)-Power journey, in as far as it helped to validate some of the early hypotheses and foci for the work, and in so doing, helped to establish credibility for the subsequent development work. The co-production phase generated a wide array of ideas for service improvement interventions targeted at the twin quality domains described above. The outputs emerging from the co-production workshops (see the 'co-design workshops finding report, section 5.2) were prioritised (figure 2) with the top three interventions identified for early development and testing. These sought to strike a balance between the scope of anticipated impact the intervention would have on addressing the primary question described above, and what the project delivery team felt was viable at both test sites, given the wide array of presenting challenges including:

- Uncertainty of future funding;
- High staff-turn over and under-investment in training;
- Anticipated reorganisation;
- Anticipated scope of front-line resistance;
- Anticipated scope of sign-off authority and permission from disparate managerial strands.

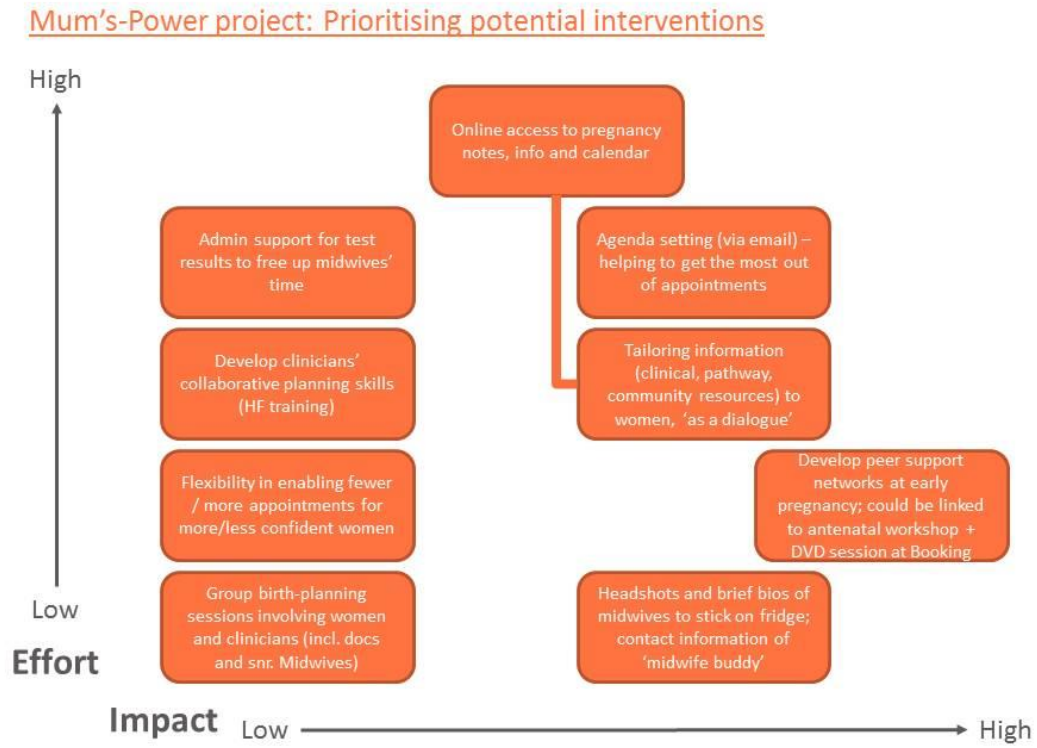


Figure 2. *Prioritising M(ums)-Power co-production insights (January 2012).*

Interventions for testing

The prioritisation of the insights emerging from the co-production workshops provided a basis for follow-up engagement with service managers at both sites in February 2012, and ultimately helped to define a menu of integrated interventions (figure 3) that included:

1. Group bookings at 12 weeks (subsequently referred as group booking).
2. Facebook group and/or email group;
3. Midwifery team bios.

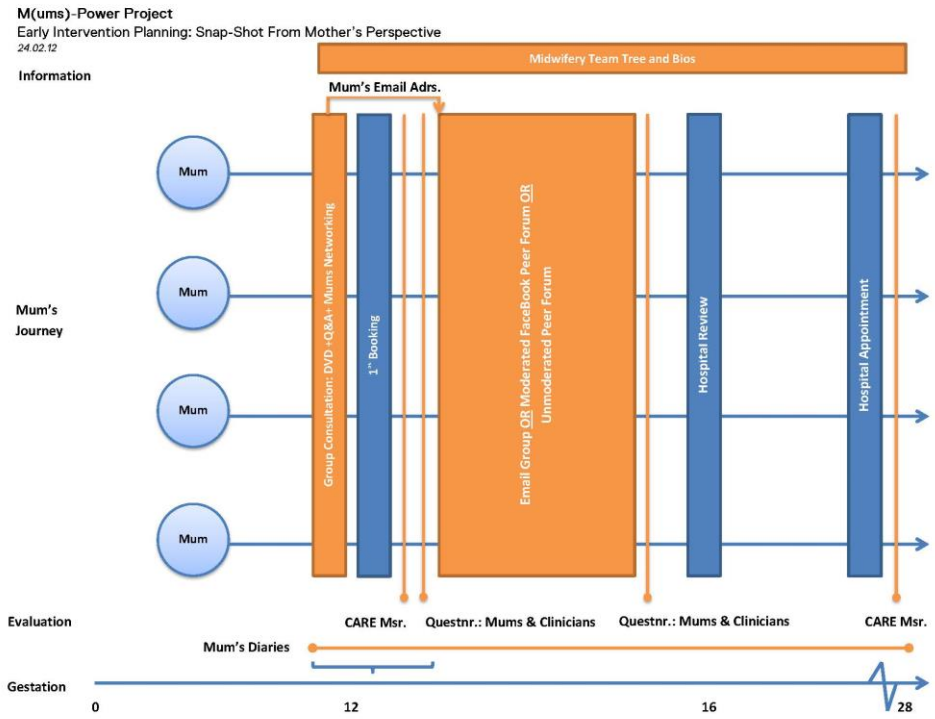


Figure 3. *Integrated menu of service improvement interventions (February 2012).*

Changes described in more depth in section 1.4 below, led to a subsequent iteration of the integrated menu of service improvement interventions in May 2012 (figure 4) that included:

1. Group booking.
2. Group consultations at 16 weeks.
3. Facebook group.
4. Wider ICT enablement.

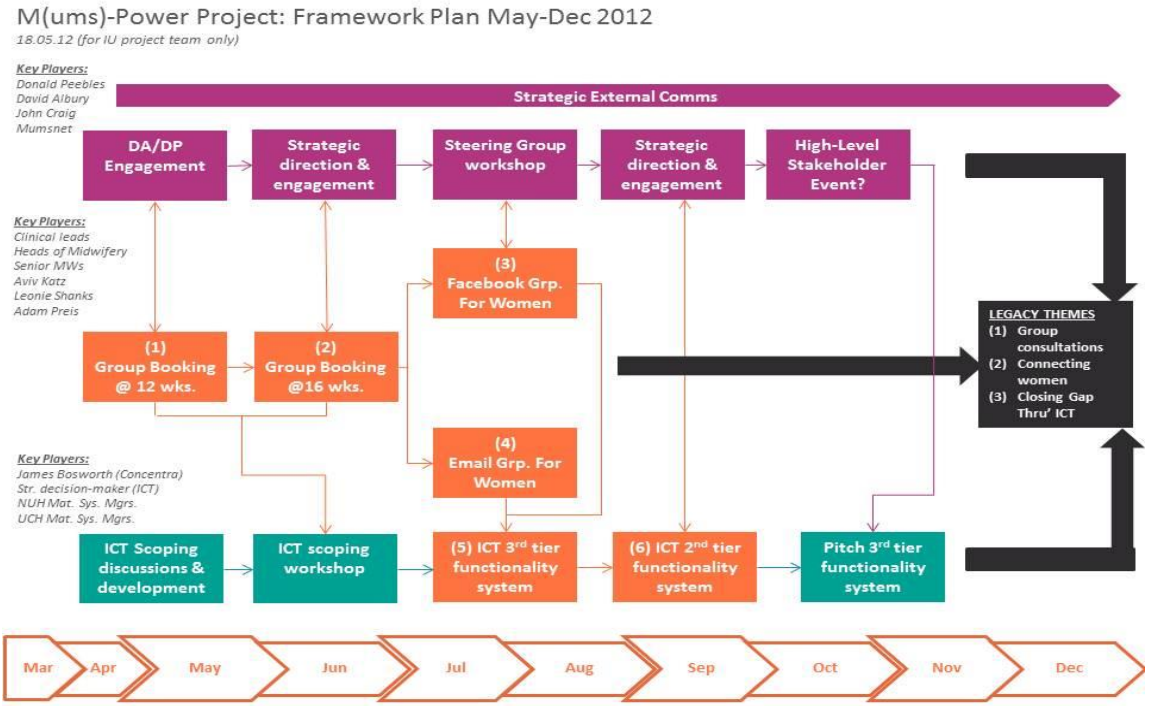


Figure 4. *Integrated menu of service improvement interventions (May 2012).*

The level of ambition and optimism about the transformative impact that these interventions could bring about meant that the project team didn't articulate the contextual factors that would be critical for success in as much depth as possible. This was partly compounded by the fact that the service improvement interventions were, at the time, a new and untested approach to delivering ante-natal care that had little precedence elsewhere in the UK. The purpose of the service improvement testing was therefore very much about learning and establishing what worked and what didn't work. Having said that, the prioritisation of the insights emerging from the co-production insights did take into account the need for the following conditions to be in place at the very minimum to make intervention testing viable:

- Operational engagement at the service manager level;
- Sufficient put-through of pregnant women;
- Floor space for delivery of group sessions;
- Local clinical leadership capable of engaging front-line practitioners.

1.4 Changes along the way

Drivers of reconfiguration

The challenges encountered during the early phase of prototype testing (March-April 2012) generated abundant learning and led to the reconfiguration of the integrated menu of interventions being tested. This shift can be directly attributed to:

- The case for sustained testing of the group booking intervention: viability of the intervention model, as evidenced by the feedback emerging from the first 3-5 PDSAs at both sites;

- The case for ramped-up testing of the group booking intervention: demand the intervention testing by UCLH service managers, in response to early service efficiency gains evidenced during the first 3-5 PDSAs;
- The case for development of a group consultation intervention: user insight and practitioner feedback emerging from intervention testing, suggesting that there was insufficient time for discussion to be covered during the 30 minute group briefing, and the suggestion from the Head of Service at UCLH for the model to be replicated at the 16 week follow-up;
- The case for moving forward with the Facebook intervention: the commitment of the clinical lead at Barts Health to testing this intervention at the Freemasons community centre.
- The case against midwifery team bios intervention: the concept of this intervention was simple – to provide women with contact information and bios of the clinical teams they could engage when needing additional support. The diffuse nature of team configurations at both test sites meant that there wasn't a dedicated structure for servicing women's concerns, aside from a generic query mailbox/telephone query line. Moving this intervention forward would require a radical overhaul of the clinical shifts, which was decided to be to disruptive to carry forward.
- The case for wider ICT enablement: the engagement of a new ICT partner (Concentra), provided the renewed impetus and capability for the initial scoping and subsequent development/prototyping of be-spoke ICT solutions that were aimed at adding value to the interventions being tested. The ICT scoping and development work capitalised on the learning generated by the intervention testing, in a way that made the solution perfectly tailored to the wider aims of the project [ref to source].

Sample size

The initial integrated menu of service improvement interventions was to be rolled out in early test mode on a fortnightly basis, providing the opportunity for the sample to reach a maximum size of 40 during the first month. It was initially anticipated that the sample would grow to a maximum size of 80 per month from the second month of testing. This aspiration was not fulfilled largely because of challenges associated with booking pregnant women into booking slots[10], and it wasn't until the intervention was successfully scaled-up that the sample size eventually grew to over 120 pregnant women across both sites. The initial plan for the baseline sample of over 200 to be collected across both sites in parallel to the service improvement intervention testing was not fulfilled owing to issues described in greater detail below, thus making cross-comparisons statistically challenging. The sampling challenges encountered during the project life-cycle are mostly attributable to the balancing act between the M(ums)-Power project team pushing to maximise the sample size and the constraints of what was realistic and viable within the context of competing service pressures. It is anticipated that the prototyping of the ICT products will reach approximately 600 pregnant women (not accounting for attrition) by end April 2013.

Methodology

The quality improvement methodology adopted for testing, and eventually scaling the service improvement intervention was co-developed with University College London

[10] The key challenge here was securing sufficient space in the ante-natal clinic, securing administrative personnel to book pregnant women into lists, and diverting front-line midwives from their standard duties. This is precisely why a more incremental approach was adopted to the prototyping of the intervention.

Partners and the UCLH quality improvement team, within the generic PDSA (Plan, Study, Do, Act) framework depicted by figure 5. This methodology continued to be deployed in modified form throughout the duration of the service improvement testing and the ensuing scale-up activity. The ICT development work adopted a modified version of the ProAgile methodology (figure 6), based on an in-house variant owned by our ICT partner, Concentra. This was supported by user feedback provided through online questionnaires (see 'MyPregnancy Journey suurvey' and 'MumsTalk survey' in section 5.8) and technical traffic data sourced through the Google Analytics platform (see 'Google analytics' in section 5.5).

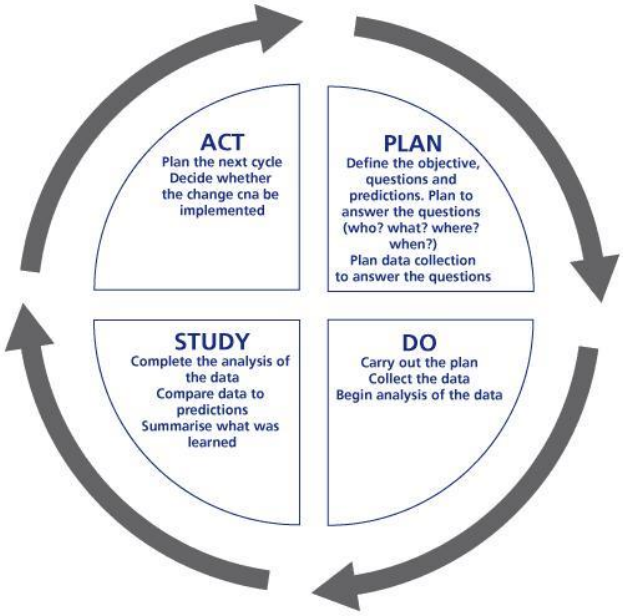


Figure 5. *PDSA methodology deployed on M(ums)-Power service improvement interventions.*

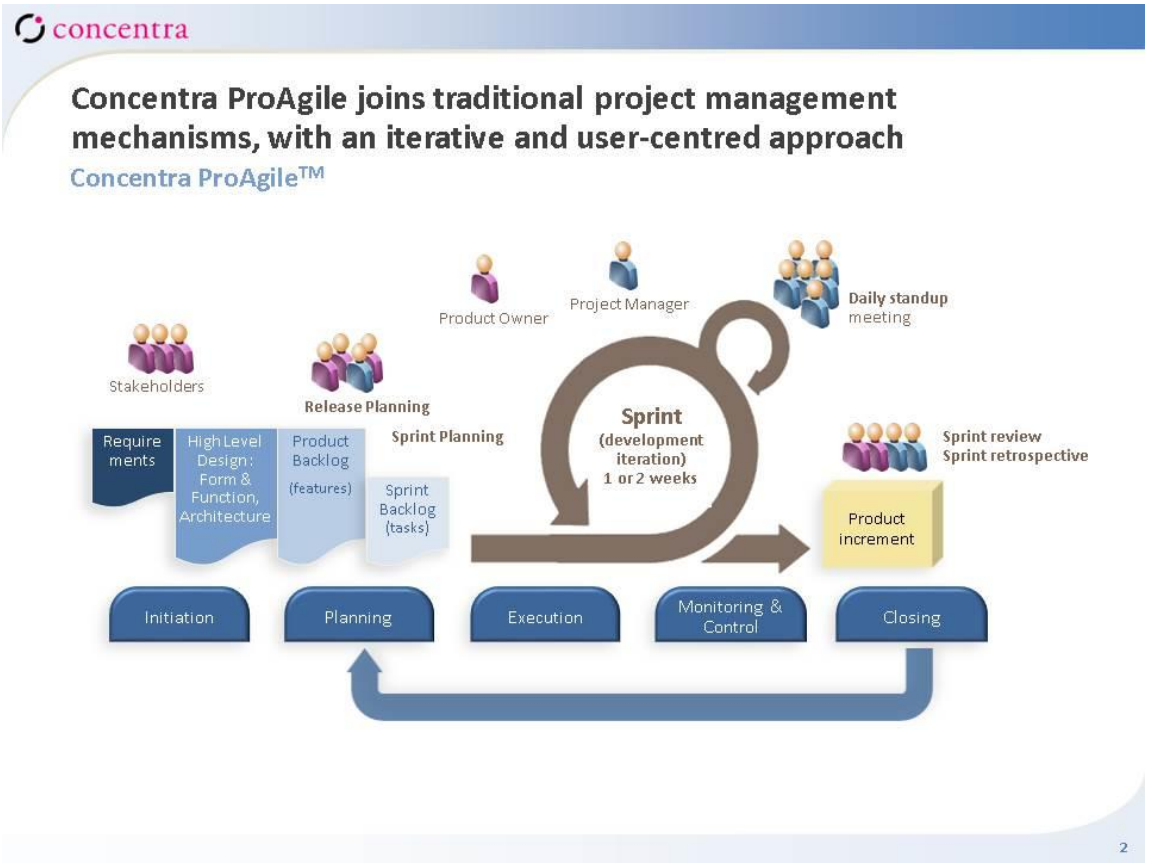


Figure 6. *Concentra ProAgile methodology (please note this is a trademark that should not be used beyond the scope of this report or reproduced without the expressed permission of its proprietor)*

2 Methods

2.1 The Intervention

The M(ums)-Power interventions consist of two strands of work – service improvement interventions and ICT enablers aimed at transforming relationships between pregnant women, health professionals and, more widely, the service provider. Both strands aim to support women to be better informed, more confident and better connected during their pregnancy. These interventions are being tested at two sites – UCLH and Bart's Health. The varying profiles of both sites largely accounts for why the interventions have been deployed and tested in a flexible manner, that broadly responds to the needs of the test sites.

Service improvement interventions

Group bookings

Antenatal care appointments are currently carried out in one-to-one face-to-face consultations between a midwife and a pregnant woman and a companion if she wishes. From March 2012 we have been testing group bookings group booking consultations at 16 weeks at UCLH and Newham. These interventions were led by the a clinical lead at site, and supported by a centralised M(ums)-Power project delivery team.

In the group bookings model used at UCH small groups (figure 7) of women (3-6) have a group briefing session of half an hour receiving generic information including information about the antenatal care pathway, diet during pregnancy, screening tests and scans. The midwife leading the intervention uses visual prompts to communicate information to pregnant women and then completes and signs a check-list of items (see 'group booking materials check-list' in section 5.4) covered in the session, which is inserted into the patient's file. Immediately after the group briefing element of the intervention, each woman will have a 30 minute one-to-one session where the midwife can focus on her medical history and needs during pregnancy. The check-list is sighted by the midwife leading the follow-up one-to-one session and ensures that information is not duplicated.

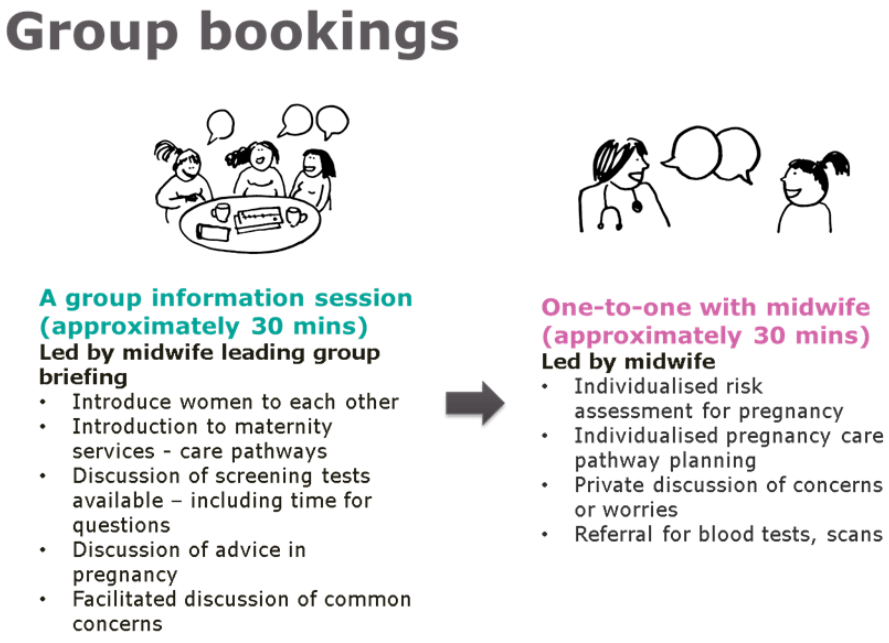


Figure 7. *Group booking model deployed at UCLH.*

The group booking model for the first two tests at NUH differed from that used at UCH in order to be compatible with the 1.5 hour slots that each woman is assigned at Newham Maternity Booking Centre, and to make the best use of resources: following a 30 minute group briefing, half of the women have their one-to-ones, whilst the remaining half remained behind for a small group discussion with the facilitating midwife. After the first one-to-ones had been completed, the women in the small group discussion then proceeded to a one-to-one, whilst the other women returned to the facilitating midwife to take part in a small group discussion. Target group sizes of 6 women were targeted during the first two cycles.

When the intervention was moved from the Newham Maternity Booking Centre at Newham General Hospital to the newly opened Barking Birthing Centre, the model used was similar to the model used at UCLH but with the group briefing lasting for 40 minutes followed by 50 minute one-to-one briefings.

Group consultations at 16 weeks

Group consultation interventions were also tested at both sites with groups of women who were 16 weeks pregnant. At this point in pregnancy women will normally have a 20 minute follow-up appointment where their blood pressure and urine is tested. The group appointments are an hour long and delivered by a midwife (the clinical lead) to a group of 6-8 women. After introducing themselves, the women are asked to fill out an agenda setting tool (see '16 week materials agenda setting tool' in section 5.4) where they select topics from a list that they would like to discuss in the group. The midwife will then discuss these topics with the women and facilitate a discussion between the women, as well as more detailed information on (i) services provided by the birthing centre; (ii) breastfeeding; (iii) positions in labour; and (iv) options for place of birth.

At UCLH the intervention was tested with a group of second time mums and a group of first time mums. At Barking Birth Centre it was tested with a group of women who had gestational diabetes.

Key stakeholders involved in the group booking and group consultation interventions at each site were:

- Heads of midwifery
- Service managers
- Senior supervisory midwifery managers
- Front-line practitioners
- Clinical specialists for screening, breastfeeding, information-sharing
- Pregnant women
- Obstetricians.

ICT interventions

Creating technology enabled maternity services has been the aim of the M(ums)-Power project since its conception. After the initial withdrawal of Tribal Health, Concentra became the key project ICT partner. The needs of pregnant women and clinicians were explored through a series of ICT development workshops and through this we developed three ICT interventions to support the group appointments – a Facebook group, an interactive information website and a bespoke social networking platform for

pregnant women. Concentra developed the ICT with input from the clinical leads and the central M(ums)-Power project team.

MyPregnancy Journey website
(http://m-power.concentra.co.uk/)

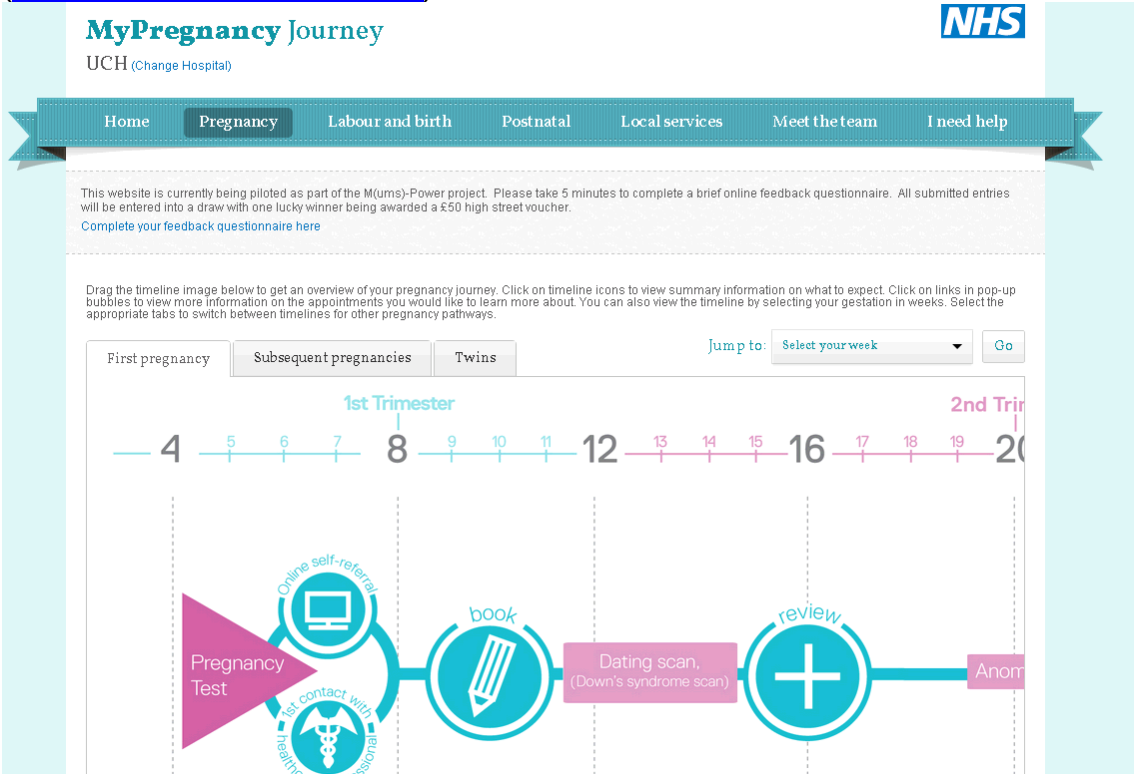


Figure 8. *MyPregnancy Journey website screencapture.*

The MyPregnancy Journey website is an information website that provides women receiving care at UCLH with site-specific information about what to expect during their pregnancy and beyond and also signposts them to other resources. The website was based on information already given to women through a range of leaflets but combined into one easy to navigate and trustworthy source. The site is initially being piloted at UCLH but a Barts Health version will follow in the future. The site is being piloted at different points in the pregnancy pathway including booking appointments, scans and antenatal classes.

MumsTalk social networking platform
(www.mums-talk.com – only available to authenticated users

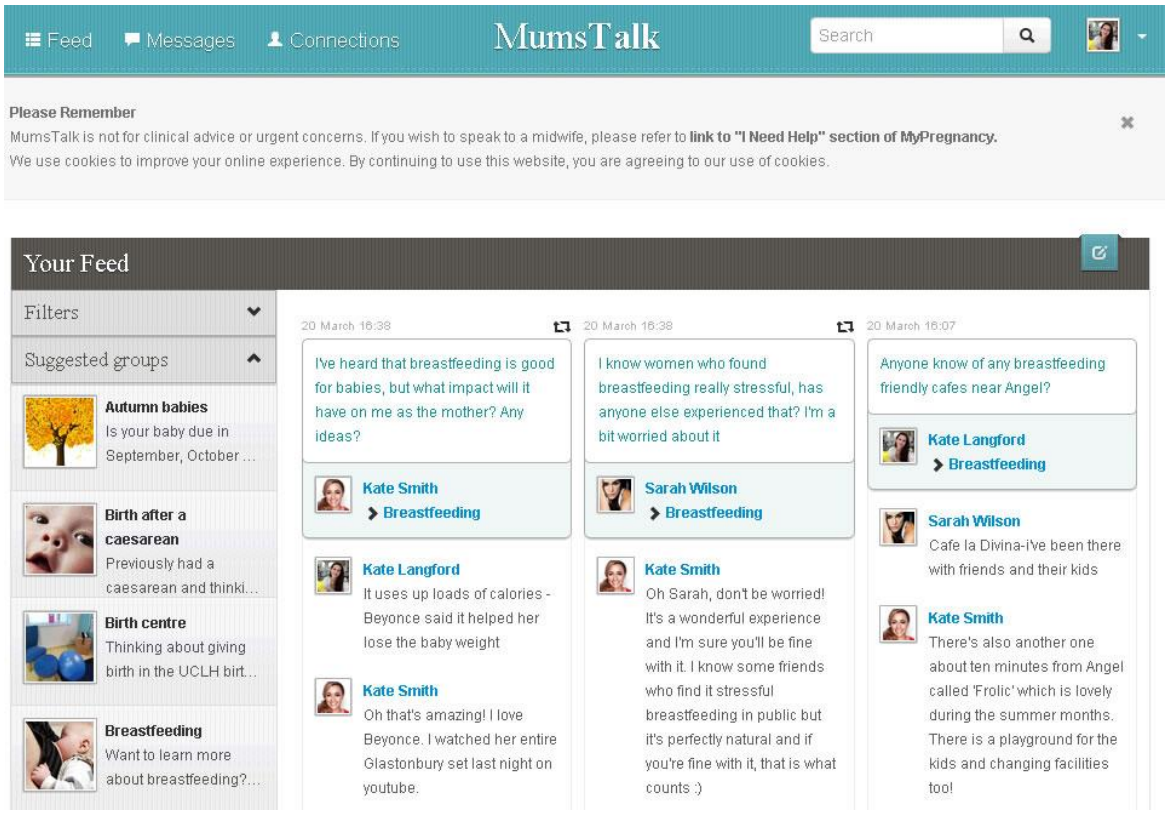


Figure 9. *MumsTalk social networking platform screencapture.*

MumsTalk is a private, invite-only social network for women receiving maternity care at UCLH.

In the future women will be able to use MumsTalk to:

- Talk to women they have met at antenatal services or antenatal classes
- Share advice, information and tips on pregnancy and beyond
- Share information about local services in their area
- Arrange meetings and catch-ups with other women.

Facebook group

Whilst working with Concentra to develop ICT technologies we decided to test the viability of using online social networks to improve care for women. The Newham Facebook Group, 'Newham Mums Know Best', was launched on September 5th 2012 and after 4 weeks it consisted of 36 members (including 3 M(ums)Power representatives). The group is closed, meaning that people can search for the group but cannot view any of the interactions between members. The site is mediated by the clinical lead at Newham, who spends about 30 – 40 minutes per week responding to comments and queries from women and encouraging interaction and information sharing. Most of the women have been engaged to join the Facebook group through their connection with the Freemasons Homebirth Team, which is run by three midwives. The group includes mums (67%) as well as expectant women (33%). Women found out about the group principally through existing relationships with clinicians and other women who were members of the group. Two of the members found out about the group through an independent Facebook search.

Key stakeholders involved in the ICT interventions at each site were:

- Heads of midwifery
- Senior supervisory midwifery managers
- Front-line practitioners
- Pregnant women
- ICT partners
- Maternity system managers
- Managed ICT contractors for maternity services
- Obstetricians.

3 Results – outcomes

3.1 Measuring the outcomes of your project on changing relationships and improved quality of care.

Choosing metrics
The key factors driving the choice of metrics included (figure 21):

- Lack of local metrics that could be used to measure patient experience and patient empowerment;
- Lack of local metrics that could be used to measure long-term impact of the intervention work on patient experience outcomes;
- Lack of national metrics that could be used to measure the impact of the intervention work on patient experience outcomes;
- The tendency of local and national indicators to focus on process- and system-orientated outputs and outcomes;
- Our understanding of the metrics that would be most successful in mobilising service managers and front-line practitioners to take ownership of the interventions and the challenges that this was likely to present. Learning generated during the prototyping and testing work, showed deficiencies in some of the initial assumptions we took when deciding which process and outcome measures to adopt;
- Our commitment to ensuring that qualitative insights would factor into the decision-making process during the testing cycle.

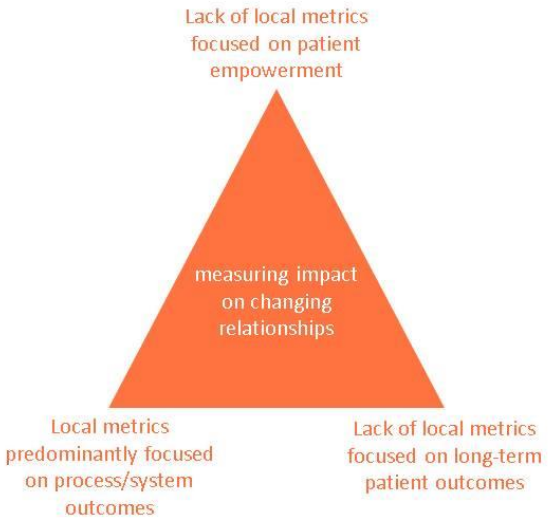


Figure 21. *The challenge of measuring impact on changing relationships.*

Process measures
Table 4 provides a summary overview of the process measures adopted for the service improvement interventions tested during the project life-cycle, as well as the ICT prototyping work undertaken in relation to the MyPregnancy Journey web-site and the

MumsTalk social networking platform. The data reported against these measures proved to be the key driver of progress in moving service improvement work from isolated testing to scaled-up testing.

Indicator 1: total combined appointment time (group booking and group consultation interventions)
Description
This measure was developed to reflect the model developed to test the group booking intervention deployed at 12 weeks, and the group consultation intervention deployed at 16 weeks at both test sites. The total combined appointment time can be defined as the total amount of time either an individual pregnant woman or a group of pregnant women spend with a midwife or a group of midwives for the appointment/group consultation to be considered complete. In a standard one-to-one appointment, this is reflected in the time the pregnant woman spends with her midwife, including the time it takes for the completion of urine checks, weight checks as well as the assessment of needs and conversation around these. This excludes time required to perform blood checks, which are carried out separately. In a group consultation environment, this is reflected in the time it takes to deliver (i) the group booking briefing, and (ii) the one-to-one follow-up. See section 2.1 for a more in-depth explanation of the intervention model.
Rationale for choice
The principal reason for choosing this indicator early on during the testing of service improvement interventions was driven by the desire to ensure that the total time absorbed in delivering the intervention did not exceed the total time needed to deliver the standard one-to-one appointment. This measure was therefore seen as an internal control measure for the project team, rather than an explicit aspiration to for the intervention to deliver a nominal efficiency gain. The chief intention was for this measure to provide an effective measure of the real efficiency gain that the intervention could bring about, when combined with indicator 3, or midwife time per pregnant women spent during a particular intervention.
Baseline
Booking at 12 weeks • UCH: target 60 minute appointment per pregnant woman (includes information sharing, medical and physical assessment) • Barts Health (Newham General Hospital): target 90 minute appointment per pregnant woman • Barts Health (Barking Birthing Centre): target 60 minute appointment per pregnant woman Follow-up consultations at 16 weeks • UCH: target 20 minute appointment per pregnant woman (includes follow-up check and appointment booking) • Barts Health (Newham General Hospital): target 20 minute appointment per pregnant woman • Barts Health (Barking Birthing Centre): target 20 minute appointment per pregnant woman
Changes
The definition of this indicator remained largely unchanged throughout the testing cycle, providing a degree of reporting stability. The prominence of this indicator grew exponentially within the context the data reported to the local decision-making sub-groups established at both test sites, and eventually became one of the main benchmarks for assessing the efficacy of the intervention. This trend can be attributed to rising prominence of the service effectiveness quality domain over the person centredness domain at UCH as well as the early difficulties in

being able to fit the intervention model within baseline target timings, accounting for significant variance in the upper reported timings (i.e. maximum time taken to deliver intervention at a particular PDSA cycle) and lower reported timings (i.e. minimum time taken to deliver intervention at the same PDSA cycle).
Efficacy
This indicator fulfilled its function as a process measure, and fed directly into the key proposition arguments being formulated under the service effectiveness quality domain. Our experience of deploying data against this measure was that this can easily create the temptation for use service improvement as a means to enhancing service efficiency at the expense of service quality. The conclusions emerging from the data reported against this indicator should therefore be carefully balanced against the data reported against quality-centric indicators described under the table 2 below. It should also be noted that the data reported against this indicator can only be effective if operational capacity is provided for this data to be routinely captured by front-line practitioners, which is currently not the case. Assessment out of 10 (0 poor, 10 optimal): 7.
Indicator 2: DNA (group booking and group consultation interventions)
Description
DNA, or 'did not attend' for short, captures the number of women who were not present during the delivery of the intervention, having committed to participate in the intervention prior to the date of delivery.
Rationale for choice
The principal driver for selecting this measure was the obligation of NHS Trusts in England to report the DNA rate at key episodes during ante-natal care. Particular prominence is attached to the DNA rates at 12 weeks (first booking) and is seen as a national proxy indicator for assessing the effectiveness of the Trust in being able to book women by 12+1 weeks of gestation. Trusts with high DNAs are therefore likely to have low 12+1 booking rates. This measure was also relevant to controlling the testing at both cycles and in determining effective group sizes for both group bookings and group consultations.
Baseline
Not presently available
Changes
None.
Efficacy
The initial intention was for the DNA indicator to measure the long-term impact of service improvement interventions on the rate of participating and non-participating pregnant women. This measure can therefore be effective when evaluating a longitudinal data set as a measure of medium-long term impact. Experience of deploying this as short-term measure showed that this indicator does not provide any value aside from providing an internal control for increasing the number of pregnant women participating in the intervention through successive PDSAs. This is particularly striking given that the underlying factors why pregnant women not to participate (and thus become designated as DNA) are difficult to control, and can thus be described as being exogenous to the intervention itself. Assessment out of 10 (0 poor, 10 optimal): 4 (7 when used longitdunially).
Indicator 3: attending numbers (group booking and group consultation interventions)

Description
Number of women participating in either standard one-to-one appointments or group bookings consultations. This excludes partners, relatives and children attending to provide pregnant women with support.
Rationale for choice
This measure was identified to provide an internal control that would provide a basis for cross-referencing balancing and outcome measures against the number of pregnant women participating at each PDSA cycle. The intention was for data reported against this measure to provide an indicator of optimal group sizes for group bookings and consultations.
Baseline
All booking-in appointments at 12 weeks and follow-up appointments at 16 weeks of gestation delivered at both UCH and Barts Health are delivered on a one-to-one basis.
Changes
Experience and learning developed through successive PDSA test cycles at both test sites suggested that group dynamics are largely shaped by those who are present at the point of the intervention being delivered, including partners. The project team made a modest change in collecting data on the number of partners accompanying pregnant women to interventions, and cross-referenced these against balancing and outcome measures with the aspiration of ensuring that partner attendance added value rather that detracted from the focus and openness of participating pregnant women.
Efficacy
The data reported against this indicator, combined with the data emerging against indicators described by table 2, helped to determine the optimal group sizes for the intervention and fed into discussions around scale-up of the intervention. This measure in therefore very useful when combined with qualitative insights and user feedback. Assessment out of 10 (0 poor, 10 optimal): 5.
Indicator 4: ICT process usage measures (ICT product prototyping)
Description
A wider array of low-level pseudo-measures were selected to assess the functionality of the two ICT products prototyped during the project life-cycle. These include, but are not limited to the following functional questions embedded within online user questionnaires: • How useful did you find feature X (closed question)? • How do you feel about the complexity of the displayed information (closed question)? • To what extent do you feel that the ICT product offers something new/not offered by other ICT products (closed question)? These low-level pseudo-measures were combined with user traffic data sourced through the Google Analytics platform to pain a comprehensive measure of the impact of the ICT products on women's perception of their pregnancy.
Rationale for choice
Provide functional benchmark for prototyping and (re)developing ICT products to ensure they added value to the overall pregnancy experience.
Baseline
None. These are new products which are not being base lined.
Changes
None.

Efficacy
Effective in providing a functional benchmark for measuring the impact of ICT enablement on the overall pregnancy experience. Assessment out of 10 (0 poor, 10 optimal): 6.

Table 4. *Overview of M(ums)-Power process measures*

Outcome measures

Table 5 provides a summary overview of the outcome measures adopted for the service improvement interventions tested during the project life-cycle, as well as the ICT prototyping work undertaken in relation to the MyPregnancy Journey web-site and the MumsTalk social networking platform. The data reported against these measures provided a means of balancing the service effectiveness and person centredness quality domains, and ultimately the focus of our service improvement work and ICT development.

Indicator 1: CARE Measure Index (group booking and group consultation interventions)
Description
The CARE Measure Index is adapted from Stewart W Mercer's (2004) Consultation and Relational Empathy (CARE) measure which: *"...is a person-centred process measure that was developed and researched at the Departments of General Practice in Glasgow University and Edinburgh University. The CARE Measure is a quick (only 10 questions), clear and easy to complete patient-completed questionnaire. It measures empathy in the context of the therapeutic relationship during a one-on-one consultation between a clinician and a patient. Originally developed and rigorously tested for use by GPs, it has since been successfully used by other medical staff, allied health professionals (AHPs) and nurses" (www.caremeasure.org).* The CARE Measure Index provides a composite score of replies to the following questions on a scale of 0-60 (0 being minimum and 60 being maximum) and provides an effective measure of the pregnant women's interaction with her midwife during one-to-one engagement. The group booking intervention asks women to complete the CARE Measure Index to assess their interaction with the midwife in the one-to-one session that follows the group booking. The group consultation intervention asks women to complete the CARE Measure index to assess their interaction with the midwife delivering the group consultation. How was the midwife you met with today at (6 point scale): 1 Making you feel at ease? 2 Letting you tell your 'story'? 3 Really listening? 4 Being interested in you as a whole person? 5 Fully understanding your concerns? 6 Showing care and compassion? 7 Being positive? 8 Explaining things clearly? 9 Helping you take control? 10 Making a plan of action with you?

Rationale for choice

The CARE Measure Index was selected as a the chief outcome indicator for measuring patient centredness upon recommendation from the OPM evaluation consultant. The project team struggled to identify an effective measure of patient empowerment and peer enablement and ultimately decided that the CARE Measure was the most optimal measure available. This challenge reinforces the notion of the wider health-care system being geared toward process/system-centric outcomes, and makes a compelling case for the advent and diffusion of a credible indicator that is capable of measuring patient empowerment and centredness.

Baseline

Bookings at 12 weeks

- UCH: 48.5 out of 60.0 (=20)
- Barts Health (Newham General Hospital): 54.0 out of 60 [to be split for both sites] (n=20)
- Barts Health (Barking Birthing centre): 54.0 out of 60 [to be split for both sites] (n=20)

Follow-up appointments at 16 weeks

- UCH: tbc
- Barts Health (Newham General Hospital): tbc
- Barts Health (Barking Birthing centre): tbc

Changes

None, although the narrow remit of this indicator led the project team to develop a more robust measure of the Women's Interaction Index, which more accurately captured the impact of group dynamics on engendering peer enablement. The limitations encountered with the CARE Measure inspired the advent of the latter measure as well as the measures described below in this table. The Women's Interaction Index comprises the following questions, and was developed relatively late on in the project life-cycle with the purpose of aiding the evaluation of the ICT prototyping:

How was the interaction with other women at (6 scale reply):

1 Making you feel more informed about your pregnancy?
2 Making you feel more confident about next steps in your pregnancy?
3 Pointing you to new sources where you can access further information about pregnancy?
4 Helping you to feel like you connected with other pregnant women?
5 Inspiring other less assured pregnant women?
6 Making you feel more comfortable about giving birth?

Efficacy

The CARE Measure Index provided a stable indictor for judging the efficacy of the impact of the service improvement interventions on women's perceived assessment of care provided by the health professional with whom they interacted as part of the intervention operating model. This measure was, alone, insufficient in painting a robust picture of women's sense of self-empowerment, and the degree to which this was linked to the impact precipitated by the intervention. This measure also failed to shed light on the impact of a socially empowered pregnancy on peer enablement and ultimately the relationship between the service-user and the health professional. The CARE Measure is a largely subjective assessment of the women's perceived interaction with the health professional, and as such, reflects personal predisposition one may hold toward the health-care system and the health professionals that operate within it.

Assessment out of 10 (0 poor, 10 optimal): as a balancing measure 7. As the primary indicator of patient centredness 4.

Indicator 2: confidence about next steps in pregnancy
(group booking and group consultation interventions)

Description

This indicator measures the impact of the intervention on women's perceived confidence about the next steps in their pregnancy and therefore the impact of the intervention on women's subsequent notion of their relationship with the next episode of their pregnancy. Respondents are asked to provide their responses on a 6 point scale (0 being worst, 6 being best).

Rationale for choice

As mentioned earlier, the CARE Measure Index is not an effective measure of women's self-perception during their pregnancy. The chief driver behind the decision to adopt this indicator was to develop a simple and accessible measure of the degree to which the intervention impacts on women's anxiety levels going forward into their pregnancy. Research shows that women's anxiety levels are particularly high before their anomaly scan at 20 weeks of gestation, and that these are not effectively addressed by the booking appointment and the follow-up at 16 weeks.

Baseline

Bookings at 12 weeks

- UCH: 5.2 out of 6 (n=20)
- Barts Health (Newham General Hospital): 4.8 [to be split for both sites] (n=20)
- Barts Health (Barking Birthing centre): 4.8 [to be split for both sites] (n=20)

Follow-up appointments at 16 weeks

- UCH: tbc
- Barts Health (Newham General Hospital): tbc
- Barts Health (Barking Birthing centre): tbc

Changes

None.

Efficacy

This simple indicator provided the basis for modifications made to the intervention through the successive PDSA cycles, and helped the midwife delivering the interventions to adjust her facilitation approach to ensure individual anxiety levels were appropriately managed.

Assessment out of 10 (0 poor, 10 optimal): 7.

Indicator 3: clarity of information
(group booking and group consultation interventions)

Description

This indicator measures women's perception of the clarity of the information at a particular point in the ante-natal pathway. Respondents are asked to provide their responses on a 6 point scale (0 being worst, 6 being best).

Rationale for choice

As mentioned earlier, the CARE Measure Index is not an effective measure of women's perception of the information they are provided with during their pregnancy. The chief driver behind the decision to adopt this indicator was to develop a simple and accessible measure of the degree to which pregnant women found the information provided by health professionals clear and easy to understand. Research shows that women are frequently overwhelmed by reams of information, particularly early on in pregnancy. This also shows that the information 'pushed out' by the health service frequently adopts the 'one-size-fits-all' mentality, rather than a more be-spoke approach that is targeted at particular themes of concern or particular groups that may experience this concern in most abundance.

Baseline

Bookings at 12 weeks

- UCH: 5.3 out of 6 (n=20)
- Barts Health (Newham General Hospital): 4.95 [to be split for both sites] (n=20)
- Barts Health (Barking Birthing centre): 4.95 [to be split for both sites] (n=20)

Follow-up appointments at 16 weeks

- UCH: tbc
- Barts Health (Newham General Hospital): tbc

Barts Health (Barking Birthing centre): tbc

Changes

None.

Efficacy

This simple indicator provided the basis for modifications made to the intervention through the successive PDSA cycles, including the development of visual tools to aid the process of communicating with the pregnant women. This was particularly useful at Barts Health where the intervention was delivered to a diverse demographic, including women who didn't have fluent command of the English language.

Assessment out of 10 (0 poor, 10 optimal): 7.

Indicator 4: resolution of questions/concerns
(group booking and group consultation interventions)

Description

This indicator measures women's perception the degree to which their interaction with health professionals at a particular point in the ante-natal pathway resolve questions and concerns they may have at that point in time. Respondents are asked to provide their responses on a 6 point scale (0 being worst, 6 being best).

Rationale for choice

This indicator supports the focus of the CARE Measure but does so in a rather more holistic fashion, where the respondent is asked to assess the degree to which the entire episode of care has resolved any questions and concerns they may have at that point in time, rather than whether these are resolved by one particular health professional. This provides a more comprehensive assessment for appraising the impact of the intervention on women's general level of concern at the early stage of pregnancy.

Baseline

Bookings at 12 weeks

- UCH: 5.4 out of 6 (n=20)
- Barts Health (Newham General Hospital): 4.2 [to be split for both sites] (n=20)
- Barts Health (Barking Birthing centre): 4.2 [to be split for both sites] (n=20)

Follow-up appointments at 16 weeks

- UCH: tbc
- Barts Health (Newham General Hospital): tbc

Barts Health (Barking Birthing centre): tbc

Changes

None.

Efficacy

This simple indicator provided the basis for modifications made to the intervention through the successive PDSA cycles, and helped the midwife delivering the interventions to adjust her facilitation approach to ensure individual questions, as well as generic areas of concerns, were

being appropriately addressed.

Assessment out of 10 (0 poor, 10 optimal): 7.

Indicator 5: health professionals' view of interaction with pregnant woman
(group booking and group consultation interventions)

Description

The health professional's feedback survey asks the latter to evaluate the effectiveness of their engagement with pregnant women through a number of focused open and closed questions.

Rationale for choice

It was evident at the outset of service improvement testing that the success of the interventions being tested was predicated on being able to impact women's pregnancy experience, bring about tangible service efficiencies, whilst creating buy-in and demand for change on the 'front-lines,' where the views of health professionals help to shape intervention models for future service delivery. The health professionals feedback questionnaire was designed with this in mind.

Baseline

None – operational blockages prevented this survey from being baselined.

Changes

Operational blockages and general resistance (see section 4.2) from front-line staff in taking time to complete the questionnaires after each of their appointments led the project delivery team to develop a streamlined list of questions aimed at teasing out the health professionals perception of the women they interacted with. The focus was re-developed on the following list of questions:

Did you feel that the pregnant woman you just met (4 point scale):

1 Shared her concerns with you?
2 Was open to what you had to say?
3 Was in need of support?
4 If so, please state what kind of support this was
5 Wanted to be signposted to information and/or additional support?
6 Is able to take control of her pregnancy after her first appointment?

Efficacy

Operational blockages meant that this measure was never fully rolled-out. (refer to section 6 below for a more detailed discussion around this)

Indicator 6: ICT outcome usage measures
(ICT product prototyping)

Description

A wider array of low-level pseudo-measures were selected to assess the impact of the two ICT products prototyped during the project life-cycle. These include, but are not limited to the following questions embedded within online user questionnaires:

To what extent does this ICT product change (4 point scale):

- Your perceptions of ante-natal services?
- The accessibility of ante-natal services?
- How informed about ante-natal services you are?
- The likelihood of you using ante-natal services in the future?

Rationale for choice

Provide a benchmark for prototyping and (re)developing ICT products to ensure they added value to the overall pregnancy experience.

Baseline
None. These are new products which are not being baselined.
Changes
None.
Efficacy
Effective in providing a benchmark for measuring the impact of ICT enablement on the overall pregnancy experience. Assessment out of 10 (0 poor, 10 optimal): 6.

Table 5. *Overview of M(ums)-Power outcome measures*

The challenges

Evidencing outcomes of the service improvement interventions described above was, in many ways, seen as the vehicle to growing the demand for change more widely across ante-natal services at UCLH and Barts Health. It was initially anticipated that outcome data would prove and sustain the case for the notion of a socialised pregnancy, with empowered and peer enabled pregnant women moving away from being passive recipients of services to being active partners in their pregnancy. This was seen as a key driver to transforming the nature of the relationship between pregnant women, service providers, as well as the wider healthcare system. The operational challenges described in sections 3.1, 4 and 6[11] presented the project delivery team with the following challenges:

- Identifying and deploying a balanced set of metrics that would be able to evidence outcomes;
- Being able to balance the service effectiveness outcome data against the person centredness data, in way that didn't play into the tendency for efficiency gains to dominate the review and assessment of service improvement activity;
- Having a sufficiently large sample to establish credibility for the outcome data at the service managerial level as well as on the front-lines;
- Creating space for qualitative insights to feed into assessment of outcomes;
- Being able to translate outcome data into learning about the shifting nature of the key relationships between pregnant women and health providers;
- Being able to draw conclusions on how wider system changes are directly and indirectly affecting the outcome data.

Baselines

Establishing credible and robust baselines for the service improvement work proved to be an on-going challenge that was never resolved due to the issues identified above. The local project delivery teams initially set about circulating the baseline questionnaires (see resources under section 5.8) to administrative staff in ante-natal clinics, who were, in turn asked to distribute these to the midwives delivering the booking appointments/group consultations. Early feedback suggested that midwives

[11] This included, but was not limited to (i) the prominence of the service agenda in driving service improvement work; (ii) not having full access to the metrics used to manage the ante-natal service; (iii) a risk-averse attitude which meant that service improvement was prototyped in an incremental rather than a more intensive fashion; (iv) being able to establish the case for change the logic for change articulated by the logic model.

were not taking-up this process, and that pregnant women felt somewhat overwhelmed with the volume of questions being asked of them. This led the project delivery team to revise the baseline questionnaires, in hope of making these more accessible and user-friendly. Efforts were also made to take the burden for ensuring questionnaires were completed away from the midwives, and led the project delivery team to tasking the administrative reception staff to collate these questionnaires after the appointment, whilst pregnant women were booking their follow-up appointments. This approach also proved to be largely ineffective as administrative staff didn't feel comfortable with setting expectations for pregnant women. Attempts at resolving this issue with the heads of midwifery and senior supervisory midwives did not yield a solution. The commitment of managers at UCLH to send baseline questionnaires to all women in the post together with a standard ante-natal newsletter never materialised, despite repeated efforts on the part of the project delivery team. The project delivery team then attempted to incentivise the administrative reception staff by offering high-street reward vouchers for those who would meet a certain quota of completed questionnaires. This seemed to work effectively, but was not deployed in time to significantly raise the baseline sample. Establishing logistical arrangements for capturing baseline data was, in general, a very time consuming and demanding task, which called for local service ownership. Unfortunately, most local service managers didn't see this as a priority.

Service effectiveness outcomes: UCLH

Data and learning emerging the testing of group appointments at UCLH showed gains in service effectiveness by reducing the amount of midwife contact time on average across appointments at a particular point of the ante-natal pathway. This was particularly striking for the group booking interventions at UCLH, where it was calculated that each midwife would be saving, on average up to 25 minutes per contact at 12 weeks, providing the prescribed intervention model timings would be maintained (30 minute group briefing, followed by a 30 minute one-to-one). The reported efficiency gains summarised by figure 10/table 1 below, show that:

- Efficiency gains are relatively small during early testing, as the intervention model beds down and front-line staff become acquainted with the new ways of working (PDSA 1-2);
- Efficiency gains rise as the reach of the intervention increases, largely through the realisation of economies of scale as well as the convergence in practice around the new model of working (PDSA 5-7);
- Efficiency gains are likely to fluctuate particularly when the intervention model is scaled-up (PDSA 8-11);
- Efficiency gains are likely to be maximised with the introduction of tools aimed at aiding the process of scaling-up the intervention (PDSA 12-15, see 'group booking materials' in section 5.4).

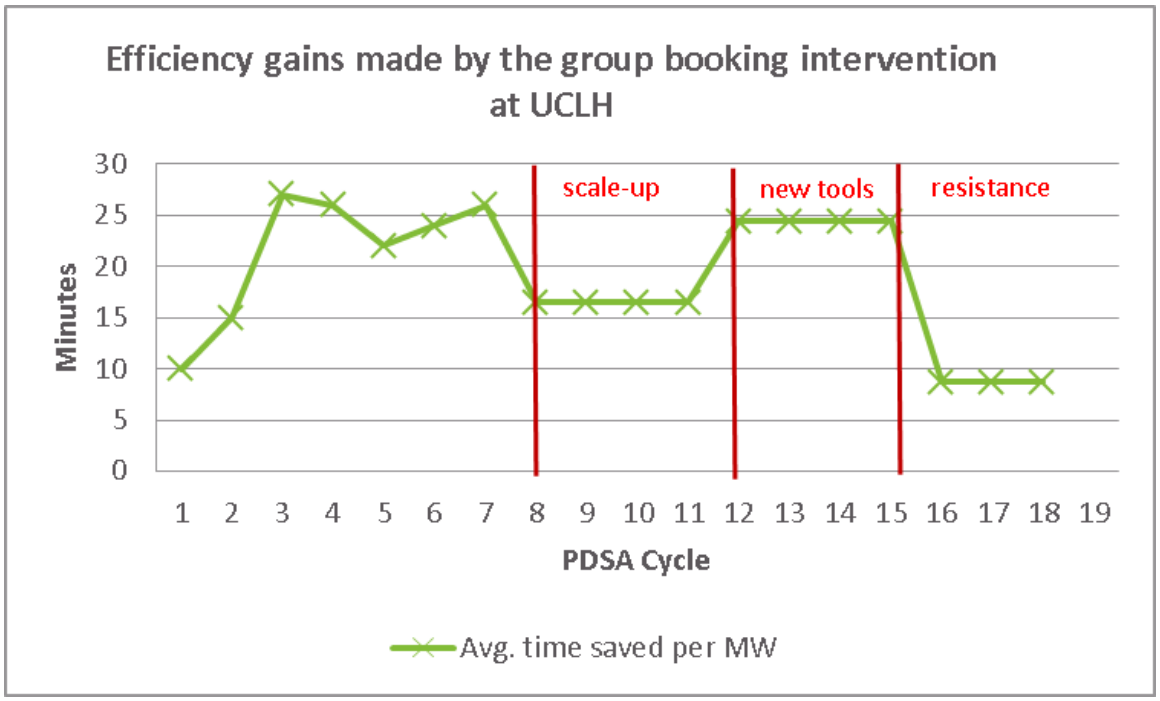


Figure 10. *Efficiency gains made by group booking intervention at UCLH.*[12]

	Who?*	PDSA 1, 28.03.12	PDSA 8-11, 17.08.12 (scale-up)	PDSA 12-15, 24.08.12	PDSA 16-18, 31.08.12
Delivery Time		3 women	5 women	5 women	5 women
Group briefing session	CL	25 mins	30 mins	30 mins	30 mins
Individual 121: 1	MW1	35 mins	37.5 (avg. PDSA 8-11)	29.6 (avg. PDSA 12-15)	45.3 (avg. PDSA 16-18)
Individual 121: 2	MW2	50 mins	37.5 (avg. PDSA 8-11)	29.6 (avg. PDSA 12-15)	45.3 (avg. PDSA 16-18)
Individual 121: 3	MW3	60 mins	37.5 (avg. PDSA 8-11)	29.6 (avg. PDSA 12-15)	45.3 (avg. PDSA 16-18)
Individual 121: 4	MW4		37.5 (avg. PDSA 8-11)	29.6 (avg. PDSA 12-15)	45.3 (avg. PDSA 16-18)
Individual 121: 5	MW5		37.5 (avg. PDSA 8-11)	29.6 (avg. PDSA 12-15)	45.3 (avg. PDSA 16-18)
Totals		CL=25 mins. MW1-3=145 mins = 48 mins per MW 145 mins + CL delivery time = 145 + 25 = 170 mins	**4 PDSAs** CL=30 mins x 4 = 120 mins MW1-5 = 37.5 mins x 5 x 4 PDSAs = 750 mins Total = 870 mins	**4 PDSAs** CL=30 mins x 4 = 120 mins MW1-5 = 29.6 mins x 5 x 4 PDSAs = 592 mins Total = 712 mins	**3 PDSAs** CL=30 mins x 3 = 90 mins MW1-5 = 45.3 mins x 5 x 3 PDSAs = 679.5 mins Total = 769.5 mins

[12] Key sources of resistance, described in section 4.2 in depth, included: (i) lack of support and ownership from service managers and head of midwifery in articulating the case for change to the front-lines; (ii) lack of prompt action on how engagement issues would be overcome within the service; (iii) natural resistance to change from the front-lines; (iv) lack of established credibility and legitimacy for the process with the local project delivery team pushing change that wasn't fronted by service managers at UCLH.

			1 PDSA CL= 30 mins MW1-5=37.5 mins x 5 = 187.5 mins Total = 217.5 mins	**1 PDSA** CL= 30 mins MW1-5=29.6 mins x 5 = 148 mins Total = 178 mins	**1 PDSA** CL= 30 mins MW1-5=45.3 mins x 5 = 226.5 mins Total = 256.5
As compared to standard first booking		3 women x 60 mins individual 121s = 180 mins	**4 PDSAs** 60 mins x 5 x 4 = 1200 mins **1 PDSA** 60 mins x 5 = 300 mins	**4 PDSAs** 60 mins x 5 x 4 = 1200 mins **1 PDSA** 60 mins x 5 = 300 mins	**3 PDSAs** 60 mins x 5 x 3 = 900 mins **1 PDSA** 60 mins x 5 = 300 mins
Efficiency Gain (excl. set-up time)		Excl. CL = 180 – 145 = 35 mins total (12 mins per MW) Inc. CL = 180 – 170 = 10 mins	**With Group Booking** 1200 mins – 870 mins = 330 for 4 PDSAs 330 / 4 = 82.5 for 1 PDSA (16.5 mins per MW per PDSA) **GAIN**	**With Group Booking** 1200 mins – 712 mins = 488 for 4 PDSAs 488 / 4 = 122 for 1 PDSA (24.4 mins per MW per PDSA) **GAIN**	**With Group Booking** 900 mins – 769.5 mins = 130.5 for 3 PDSAs 330 / 3 = 43.5 for 1 PDSA (8.7 mins per MW per PDSA) **GAIN**

CL: Clinical Lead MW; MW: Midwife; SMW: Senior Midwife; PM: Project Manager.

Table 1. *Efficiency gains made by the group booking intervention at UCLH.*

The scope of service efficiency gains made by introducing the group booking intervention is directly relates to the total combined reported times (time it takes to complete the group briefing and a follow-up one-to-one), suggesting that efficiency gains are best maximised in an environment where staff are supported by service managers and clinical supervisors in making the transition to new ways of working. Figure 11 below shows the total combined appointment timing reported for the group booking at UCLH.

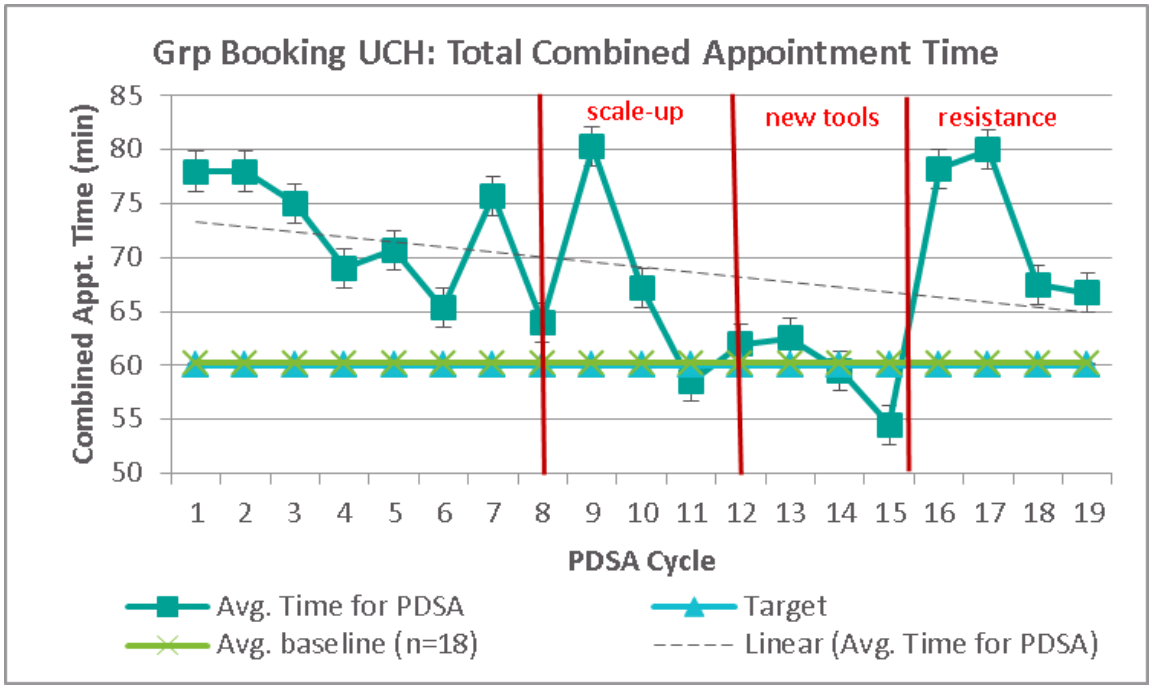


Figure 11. *Total combined appointment time for group bookings at UCLH.*[13]

The early testing of the prototype model for the group consultation at 16 weeks suggests that efficiency gains can only be realised for group sizes of 4 or more women as illustrated by table 2 below:

Delivery Time	3 women	4 women	5 women
Group Consultation at 16 weeks	60 mins	60 mins	60 mins
As compared to standard first booking	20 minutes per 121 follow-up session x 3 women = 60 mins	20 minutes per 121 follow-up session x 4 women = 80 mins	20 minutes per 121 follow-up session x 5 women = 100 mins
Efficiency Gain (excl. set-up time)	**NO GAIN**	80 mins – 60 mins = 20 mins **GAIN**	100 mins – 60 mins = 40 mins **GAIN**

Table 2. *Efficiency gains made by the group consultation at 16 weeks (UCLH).*

Service effectiveness outcomes: Barts Health

Data and learning emerging from the testing of the group booking intervention at Barts Health showed gains in service effectiveness by reducing the amount of midwife contact time on average across appointments at a particular point of the ante-natal pathway. Although the local project delivery team did not collect as precise data relating to the timings as at UCLH (largely owing to the decision to move the intervention from Newham General Hospital to the Barking Birthing Centre which was not yet operating at full capacity from PDSA 3 onwards), back of the envelope illustrated by table 3 show that the efficiency gains evidenced across PDSA cycles 6-8 produced a saving of 13.3 minutes per contact per midwife at booking. The scope of efficiency savings generated

[13] Average baseline of 60 minutes (n=18) was equal to the target time set for the intervention. This expectation was set by the Head of Midwifery at UCLH. The intervention was only going to be successful if it could within the standard time it takes to deliver a group appointment, i.e. 60 minutes.

by the group booking intervention is again proportionately related to the total combined appointment time as illustrated by figure 12.

	Who?*	PDSA 6-8 (Barking Birthing Centre)	PDSA 9-11 (Barking Birthing Centre)
Delivery Time		5 women	5 women
Group briefing session	CL	35 mins	35 mins
Individual 121: 1	MW1	35 mins (avg. for PDSA 6-8)	42 mins (avg. for PDSA 9-11)
Individual 121: 2	MW2	35 mins (avg. for PDSA 6-8)	42 mins (avg. for PDSA 9-11)
Individual 121: 3	MW3	35 mins (avg. for PDSA 6-8)	42 mins (avg. for PDSA 9-11)
Totals		**3 PDSAs** CL=35 x 3 = 105 mins MW1-3 = 35 mins x 3 x 3 PDSAs = 315 mins Total = 420 mins **1 PDSA** CL = 35 mins MW1-3 = 35 x 3 = 105 mins Total = 140 mins	**3 PDSAs** CL=35 x 3 = 105 mins MW1-3 = 42 mins x 3 x 3 PDSAs = 378 mins Total = 483 mins **1 PDSA** CL = 35 mins MW1-3 = 42 x 3 = 126 mins Total = 161 mins
As compared to standard first booking		**3 PDSAs** 60 mins x 3 x 3 = 540 mins **1 PDSA** 60 mins x 3 = 180 mins	**3 PDSAs** 60 mins x 3 x 3 = 540 mins **1 PDSA** 60 mins x 3 = 180 mins
Efficiency Gain (excl. set-up time)		**With Group Booking** 540 mins – 420 mins = 120 mins for 3 PDSAs 120 / 3 = 40 for 1 PDSA (13.3 mins per MW per PDSA) **GAIN**	**With Group Booking** 540 mins – 483 mins = 57 mins for 3 PDSAs 57 / 3 = 19 for 1 PDSA (6.3 mins per MW per PDSA) **GAIN**

**CL: Clinical Lead MW; MW: Midwife; SMW: Senior Midwife; PM: Project Manager.*

Table 3. *Efficiency gains made by the group booking intervention at Barts Health..*

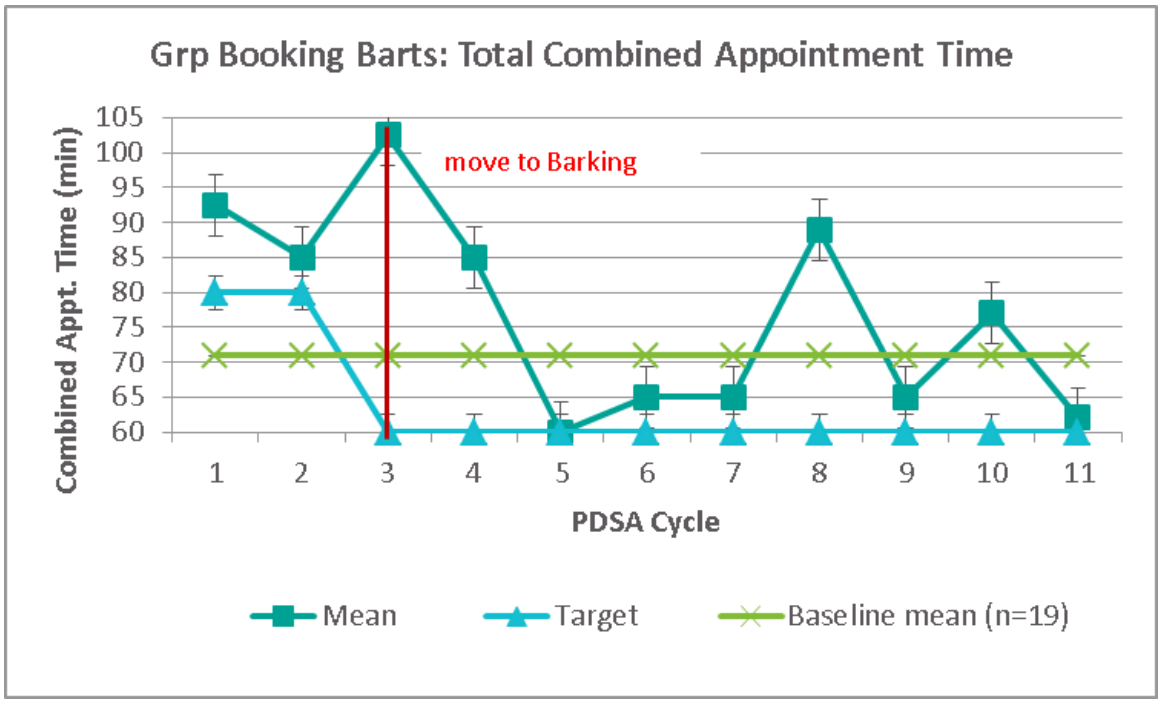


Figure 12. *Total combined appointment time for group bookings at Barts Health.*[14]

Person centredness outcomes: UCLH

Data and learning emerging from the testing of group appointments show that the group booking intervention was marginally more effective improving person centredness outcomes for pregnant women than standard practice, whilst showing that the group consultation intervention at 16 weeks has more scope for making women's service experience more person-centered. This points to two possible conclusions:

1. Group appointments may not be effective at increasing patient centredness at all points of the ante-natal pathway;
2. Or, the factors required to make group appointments work at different stages of the ante-natal pathway may vary, thereby nullifying a one-size fits intervention model.

The variance illustrated by figure 13 shows that the group booking intervention had a marginal impact on women's perception of the care they received in the follow-up one-to-one sessions, as evidenced the shift of the average CARE Index from 47 (out of a possible maximum of 60) at PDSA 1 to the average CARE index of 55 at PDSA 16. This would initially seem to suggest that group bookings are generally ineffective at increasing patient centredness at 12 weeks. However, closer inspection shows that the group booking can be effective at increasing patient centredness, particularly when the reach of intervention is expanded (PDSA 3 and 9), and when new tools to aid the delivery of the intervention are deployed (PDSA 12). Learning described in more detail in section 6 shows that the biggest challenge lies in sustaining the impact that this intervention can have on improved patient centredness. Managerial and supervisory support as well as front-line ownership is a key requisite of being able to sustain this

[14] Mean refers to the average total combined appointment time across the PDSA. This is an average taken across the number of follow-up one-to-one appointments carried out following a group booking. Baseline mean refers to the average appointment time carried at across each baseline snapshot.

trend. The group booking intervention model is, by itself, not capable of bringing about a tangible improvement in short-term perception of care.

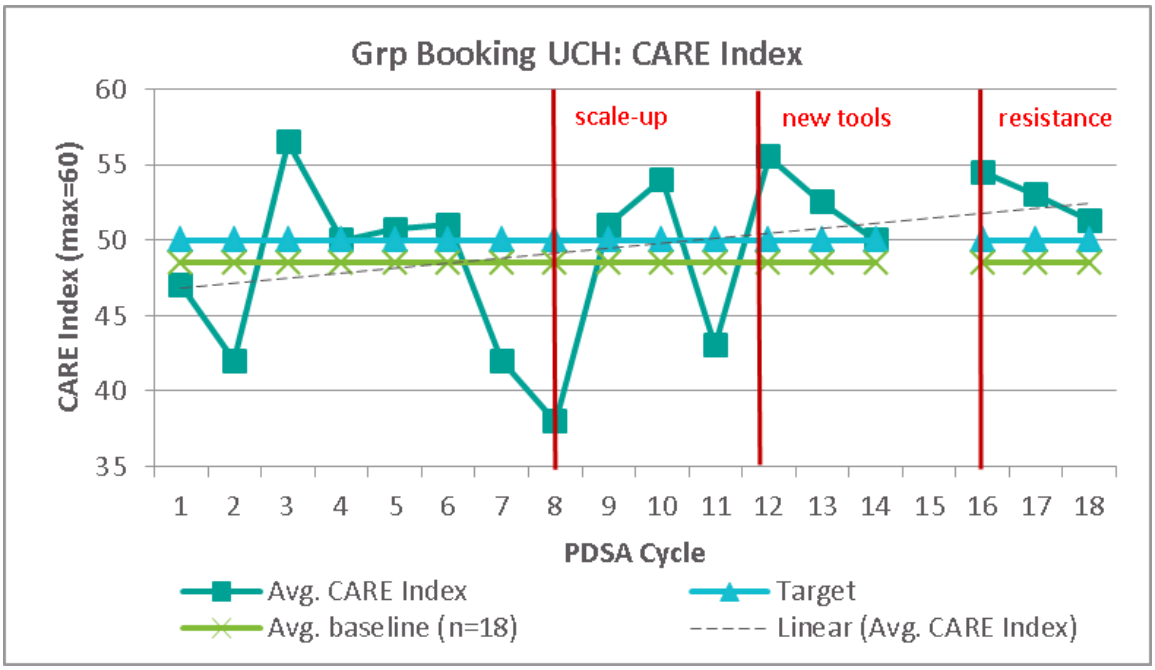


Figure 13. *CARE Index outcomes for group bookings at UCLH.*

Figure 14 suggests the group booking intervention is only marginally more effective at enhancing women's confidence about their next steps in pregnancy than standard practice. Qualitative feedback by pregnant women and the front-line practitioners participating in the intervention seem to suggest that 30 minutes allocated to the group briefing is insufficient in being able to dispel women's anxiety. This is not surprising given the feedback generated during the co-production phase suggests that women's anxiety levels are particularly high before their first formal ante-natal appointment. Anxiety levels tend to stabilise and decline in between the 12th and 24th week of pregnancy, and increase again after the 34th week leading up to labour.

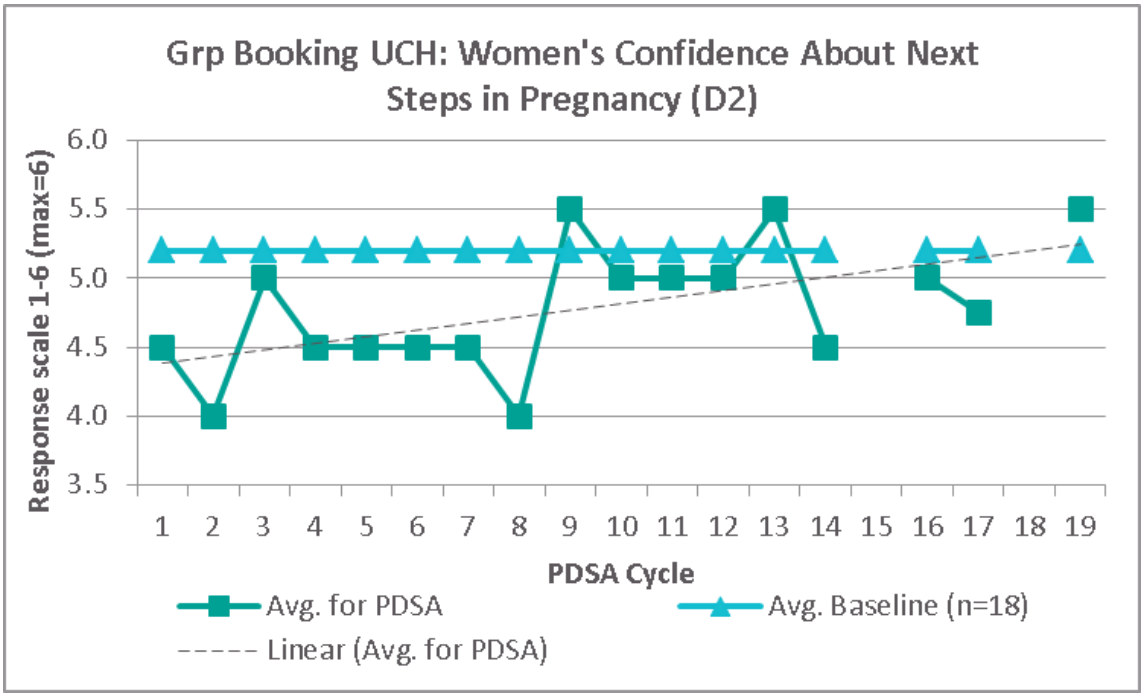


Figure 14. *Women's confidence outcomes for group bookings at UCLH.*

Figure 15 suggests that the group booking is only marginally more effective at providing information shared at the 12 week booking that is described as 'having more clarity.' This is understandable given the sheer breadth and depth of information pushed out to pregnant women at booking, and even more understandable given the fact that 30 minuets is insufficient to deliver an effective group briefing. What is interesting is that the clarity of information sharing can be aided by the degree to which information is visualised and tailored the women's interests and concerns. This is supported by the decision to deploy visual tools (see 'group booking materials food and scans slide deck; in section 5.4) to support the scale-up of the intervention at PDSA 8, as well as the introductions of tools aimed at reducing duplication of information shared in the group briefing and the follow-up one-to-one, at PDSA 12. This data fed directly into the development and prototyping of the MyPregnancy Journey website, which can be deployed to present information in a visually engaging style during the group booking session and also provides scope for women to access information about what they might expect from their pregnancy journey before they attend the group booking.

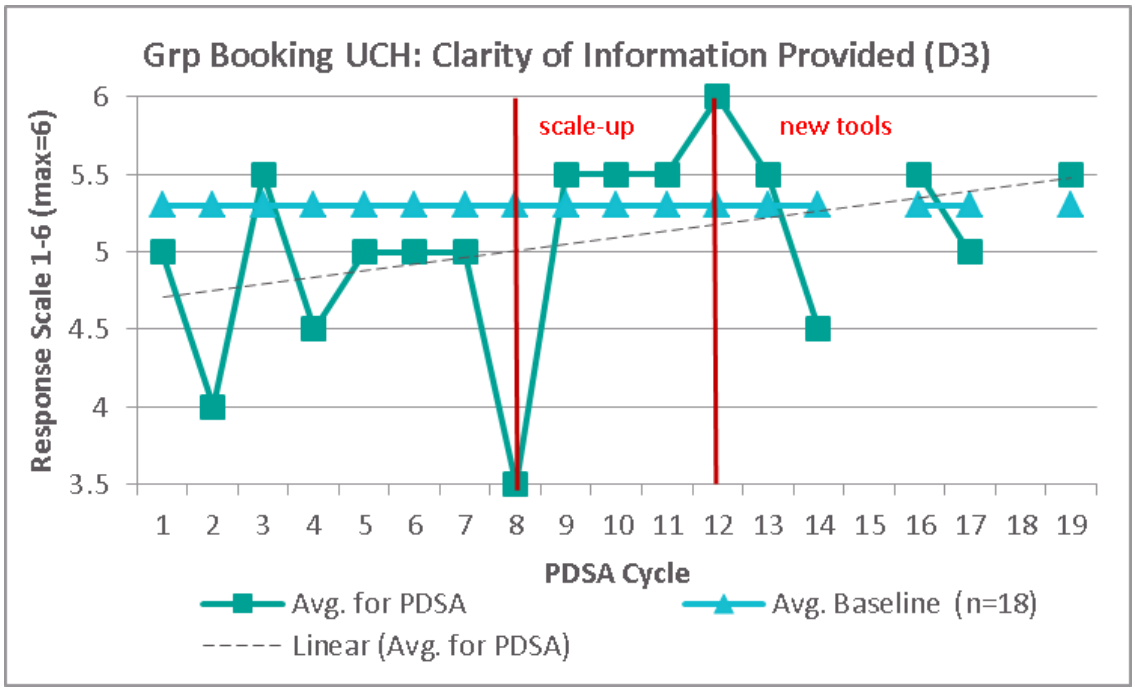


Figure 15. *Clarity of information outcomes for group bookings at UCLH.*

Figure 16 suggests that the group booking intervention is less effective at resolving any questions that pregnant women may have than standard practice. Feedback provided by pregnant women and health professionals participating in the intervention suggested that the 30 minute group briefing session does not provide sufficient time for a discussion around the common questions and concerns that pregnant women may have. The original intervention model allocated a 45 minute slot to the group briefing part of the intervention, however, this was subsequently scaled back to 30 minutes in response to the disruption that former model would have caused, and the negative impact that this would invariably have on the scope of efficiency gains that could be generated by the intervention.

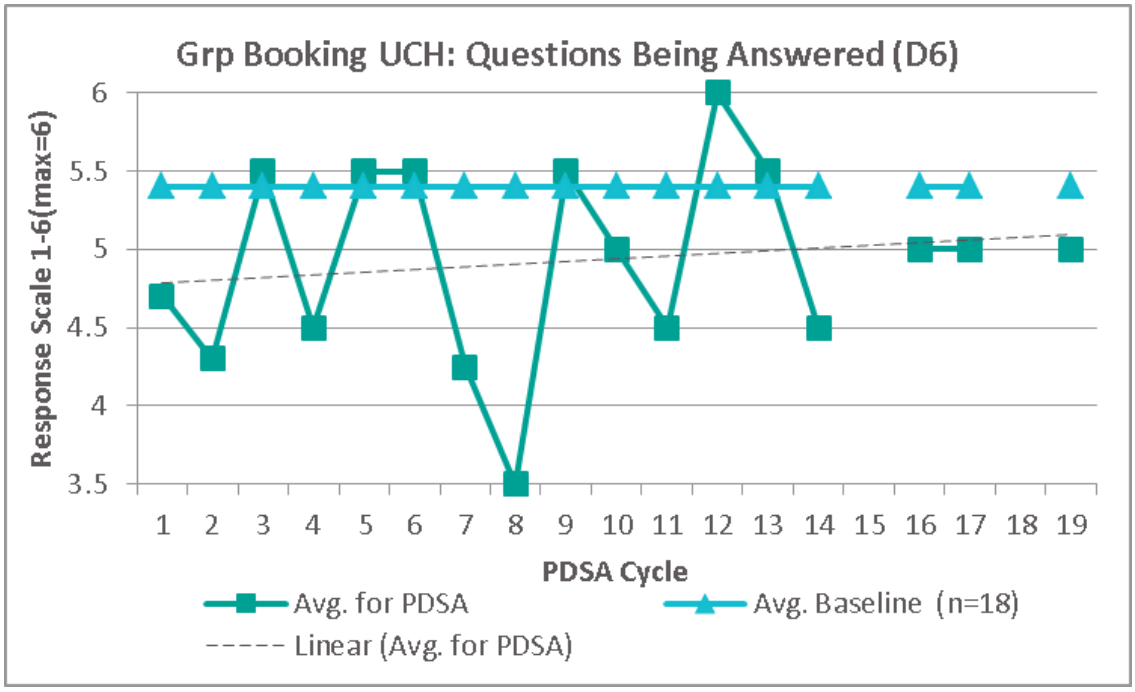


Figure 16. *Resolution of questions and concerns outcomes for group bookings at UCLH.*

Feedback from the early testing of the group consultation intervention at 16 weeks yielded an average CARE Measure score of 57 out of a possible 60, suggesting that the pregnant women who participated in the intervention formed a very positive perception of the care provided by the health professional leading the session. One pregnant woman articulated her delight with the session by saying that "I think it was wonderful.' It's difficult to reach conclusions as to the optimal group size for this intervention, as each PDSA was run with two women – we hope to be able to provide more learning on this. It should also be noted that all of the pregnant women who participated in the intervention said they would like to keep in touch with the women they met, with all women saying that it would be either 'likely' or 'extremely likely' they would be recommending maternity services at UCLH to pregnant friends and family members. It also appeared that the agenda-setting tools added value in focusing the discussion on the topics that attending women found to be most interesting. This ensured that they were active participants in the discussion rather than passive recipients of information as is normally the case.

Person centredness outcomes: Barts Health

Figure 17 shows that the group booking intervention improved the perception of care reported by pregnant women at Newham General Hospital (PDSA 1-2) as compared to standard practice. Figure 17 also shows that the group booking consistently improved women's perception of care at 12 weeks at the Barking Birthing Centre as compared to standard practice (PDSA 4-11). This data also suggests that the disruption caused by moving the intervention testing from Newham General Hospital to the Barking Birthing Centre invariably affected the standard of interactions between pregnant women and health professionals. Changes in the intervention model thus invariably affect the gains in persons centredness, and require time to bed-down before an upward trend can be resumed. The intervention model used at Barts Health provided more time for the group briefing session, thus validating the hypothesis emerging from the work at UCLH that patient centredness can effectively be enhanced by providing more scope for interaction between pregnant women and health professionals.

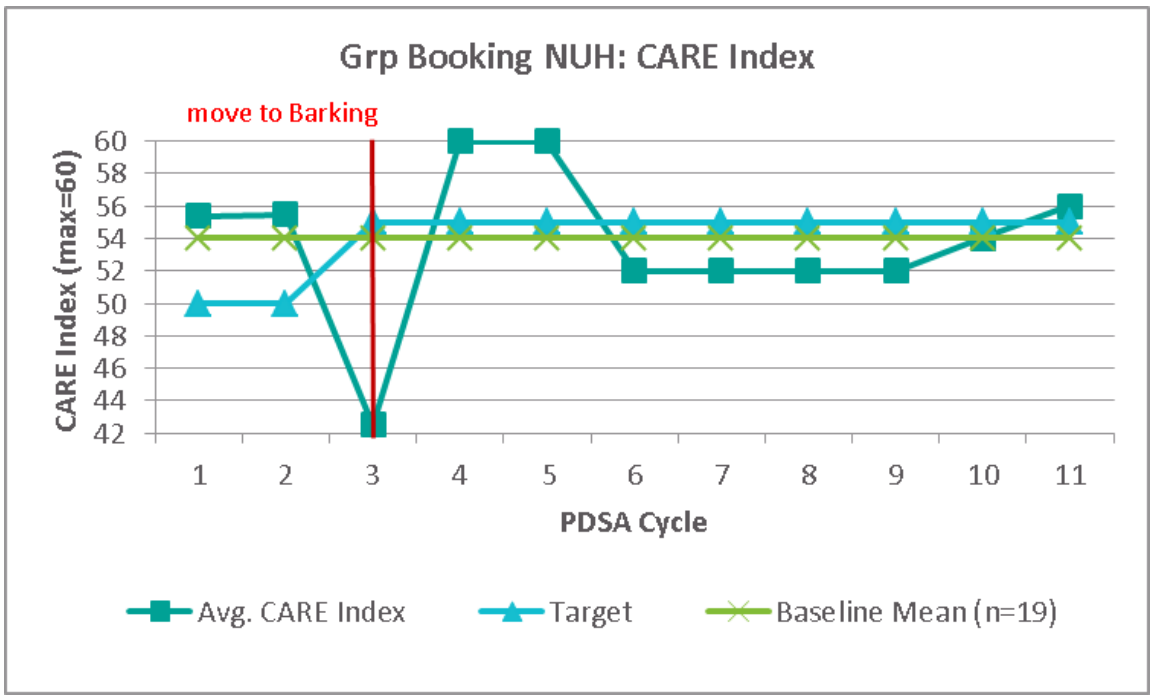


Figure 17. *CARE Index outcomes for group bookings at Barts Health.*

Figure 18 shows that the group booking intervention is marginally more effective at building women's confidence about the next steps in their pregnancy as compared to standard practice. This appears to be directly related to the staffing capacity allocated to the delivery of the interventions, and largely accounts for the dips at PDSA cycles 3 and 6.

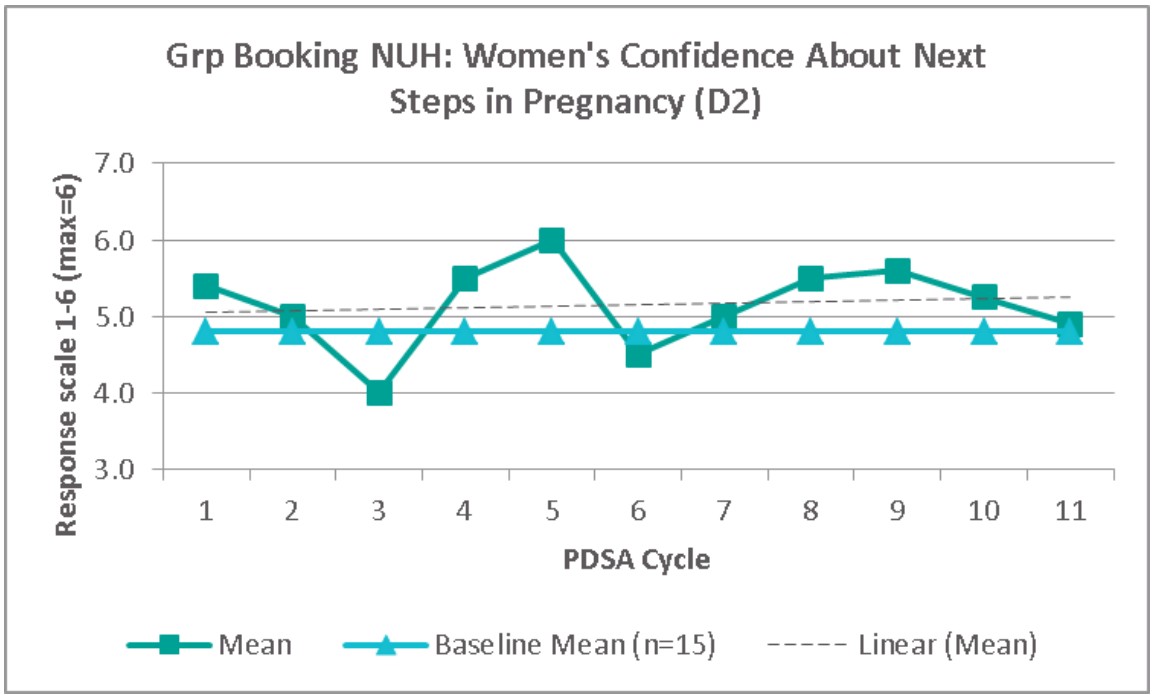


Figure 18. *Women's confidence outcomes for group bookings at Barts Health.*

Figure 19 shows that the group booking intervention is marginally more effective at enhancing the clarity of information pushed to women at 12 weeks than standard practice. This data also relates to the data summarised by figure 18, and suggests that women's perception of the clarity of information is directly related to perception the confidence about their next steps in pregnancy.

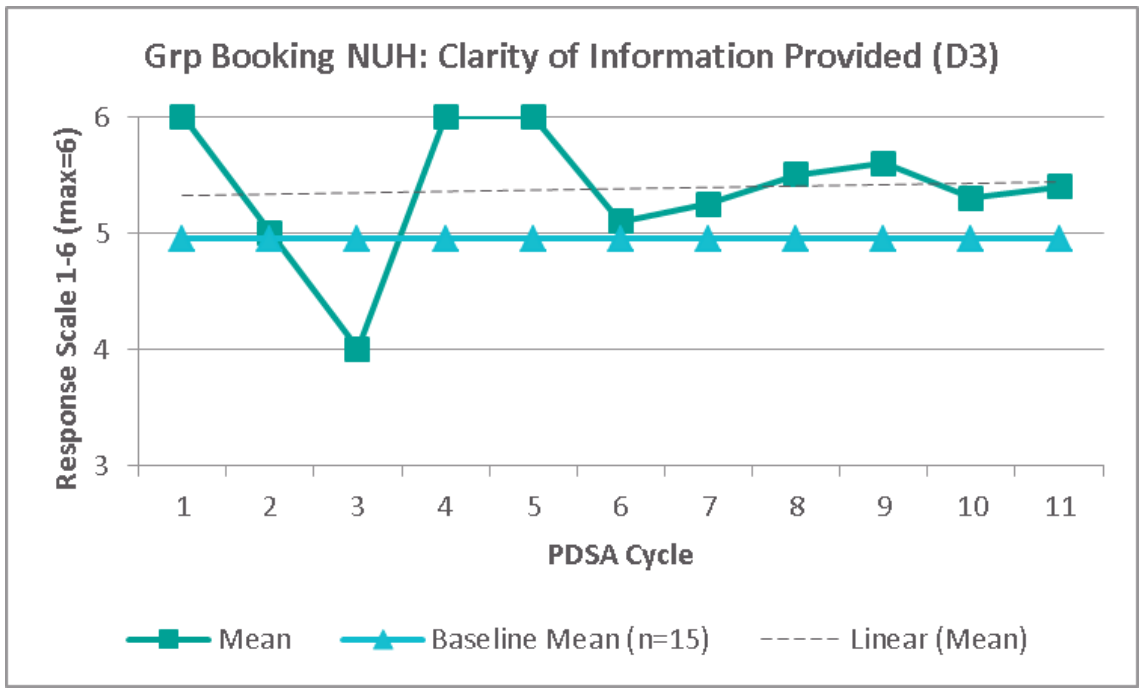


Figure 19. *Clarity of information outcomes for group bookings at Barts Health.*

Figure 20 shows the group booking intervention shows the group booking intervention to be markedly more effective at helping to resolve women's questions than standard practice. This contrasts the findings generated at UCLH and against suggests that allowing more time for the group briefing and the general interaction between pregnant women and health professionals enhances the former's perception of person centeredness. It is also worth noting that changes in the intervention model and how this is delivered tend to reduce space for women to pose additional questions. This is very largely related to the projection that health professionals tend to display when working to a new model of practice, and suggests that the transition to a new intervention model should be supported by health professionals that have prior experience and confidence in the new model. Front-line and managerial support in this respect is crucial.

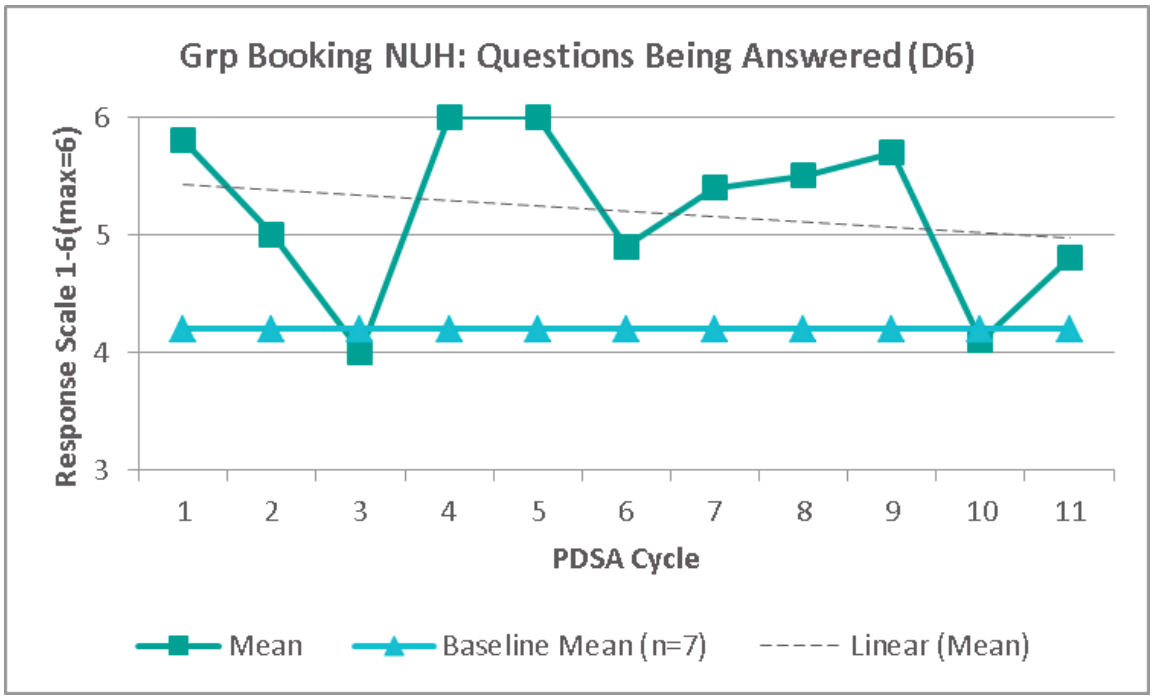


Figure 20. *Resolution of questions and concerns outcomes for group bookings at Barts Health.*

Anticipated outcomes emerging from ICT work

The learning generated during the prototyping of the MyPregnancy Journey website (incoming traffic between February and end May 2013 = 509 (of which 291 were unique visits)) and the MumsTalk social networking platform is (incoming traffic between April and end May 2013 = 490 (of which 150 were unique visits)) outlined below and framed by qualitative and quantitative questionnaire findings (see section 5.5). The ICT products prototyped at UCLH aim to generate the following outcomes:

- Women are more likely to be better informed, more prepared for their group booking/booking appointment and therefore more in control of their pregnancy. This is likely to reduce the midwife time that is required to provide a good standard of quality care, thereby increasing potential service efficiencies;
- More effective provision of information that is tailored at the needs and concerns of pregnant women. It is anticipated that the diffusion of the MyPregnancy Journey website will improve women's confidence about the next steps in their pregnancies, and their perception of the clarity of information they are being provided with. This

may also indirectly help to improve their perception of interaction with the health professionals at 12 weeks, as measured by the CARE Index;

- More effective resolution of questions and anxieties through the MumsTalk social networking platform. It is anticipated that by giving pregnant women access to localised peer networks, they will be able to resolve more of the queries and concerns about their pregnancy through their peers. This may also indirectly help to improve their perception of interaction with health professionals, as measured by the CARE Index.

The following qualitative user feedback generated by early testing of the MyPregnancy Journey website reinforced the above hypotheses:

> *"Most information is out there on the internet but it is very fragmented and not always hospital specific. I personally found hospital pretty daunting and not sure what to expect, this new website allows all of the information relevant to your hospital all in one place, easy to access, clear and user friendly."*
>
> *"Great to have all information in one place with NHS logo but richer experience (more video, advise and support from other mums on some kind of social network) would make the site stand out and definitive source of information."*
>
> *"Very comprehensive all-round support and information in one place."*
>
> *"Especially first baby, you are reading up all the time as a first time mum. You will look at all of it before you have even had your first scan!"*
>
> *"I have 3 children and would have used the website through my whole pregnancy (wasn't allowed to select more than one option). It would have helped me to understand what care i would receive and when. Also I used the hospital birthing centre but found it hard to find information on it but this website is really informative."*
>
> *"A compilation of useful links, information, groups, contacts, etc. all that any mum or a mum-to-be wants to know. Very comprehensive and informative."*
>
> *"It's great because it's hospital specific, and that it's from a source of trust."*
>
> *"When you start to plan your labour it's good to familiarise your self with staff and the hospitals services."*
>
> *"You can get this info from other websites but maybe not all in one place."*

The following qualitative user feedback generated by early testing of the MumsTalk social-networking platform reinforced the above hypotheses:

> *"I'd definately use this website if I was going to this hospital for my birth. To be able to exchange stories and tips with local mums is a real bonus."*
>
> *"The best advantage of this site, as oppose to facebook, is the privacy."*

"Your niche is the connection between the mums and the hospital. Having the opportunity to connect to local mums in this way is great."

The feedback suggests, however, that more needs to be done to develop the MumsTalk functionality, log-in processes and generally the mechanics of how women engage with each other. This is precisely what UCLH has agreed to provide additional funding for continuing the pilot on a three-month rolling basis. We are also of the opinion that these efforts would benefit from the expertise of social networking experts, who could help to optimise our current approach to generate traffic, and engagement and therefore impact.

Impact on relationships

Learning and qualitative insights generated during intervention testing at both UCLH and Barts Health suggests that service improvement activity in a broad sense, is unlikely to shift the dynamic of the passive relationships that currently exist between pregnant women and health professionals, as well as the wider health service provider, without a genuine and sustainable change in operating culture (this is explored in more conceptual depth in section 4.4). The key to bringing about a change in operating culture lies in successfully blending the evidence and learning that emerges from intervention testing with engagement, commitment and buy-in at the managerial, supervisory and front-line levels. Group bookings, group consultations and ICT enablement by themselves, cannot bring about such culture change.

Early enthusiasm for the ICT development work amongst service managers and front-line practitioners would seem to suggest that technology has more scope for bringing about a change in relationships, particularly if this is embedded across interventions being tested or scaled-up. This is precisely why the M(ums)-Power strategy is aimed at deploying the ICT products in a manner that adds value to group bookings and group consultations.

The learning emerging from the testing of the Facebook intervention (see 'Facebook intervention at Barts Health in section 5.5) and the dynamics between how women engage in group bookings, but particularly group consultations (where there is more time for women to engage with one another), shows that one of the critical factors behind changing the relationship between pregnant women and health professionals, as well as the health provider more widely, is largely a function of the change in relationships between women themselves. Transforming the relationship between pregnant women, by empowering them to take control of their pregnancy and opening opportunities up for them to support one another during the ante-natal process will invariably shift their relationship with health providers. One of the key outcomes of the M(ums)-Power project that is difficult to measure and quantify is to foster a change in the relationship amongst women. This is evidenced by the following qualitative feedback from women participating in the intervention testing:

- Feedback from one pregnant woman completing the M(ums)-Power pregnancy diary: *"I would like to know about other pregnant ladies' experience. How they feel about their experiences."*
- Service improvement feedback from a participating pregnant woman: *"[it would be good to] link pregnant women up with post natal network […] being pregnant is such a small thing compared to motherhood."*

- Feedback from the supervising midwife at UCLH: peer enablement is good *"especially for first time mums making a connection with other women. A one off groups isn't enough. You have to come a couple of times. They will then contact. The women take control and share learning and experience and what they want, how they feel. At the moment it is quite dictatorial (in one to one) – we give information, they nod their head and walk away. If we could change it so that women felt safe and felt comfortable so they could talk about how they feel, meet in groups to talk. Women making a connection with others."*
- Feedback from the consultant midwife leading the service improvement work at Barts Health: *"sometimes women do feel quite comfortable in the group. They may feel embarrassed to bring up an issue that someone else might raise. They will learn from each other. In one group they developed a peer support process."*
- Service improvement feedback from a midwife participating in the intervention at Barts Health: group bookings are *"a good opportunity for women to meet other women at the same stage of the pregnancy."*
- Feedback from pregnant woman participating in the Facebook group intervention at Barts Health: "it makes me feel like I am not alone."

Linkages between changed relationships and quality of care
This is explored in depth under section 4.4.

3.2 What has been the overall impact of your project?

Unintended impact
The service improvement testing has generated a narrow range of negative outcomes that might directly or indirectly create the following unintended impact in the future:

- Service efficiency gains evidenced by the group booking and group consultations at 16 weeks will potentially reduce the supply of midwifery at the early stage of pregnancy, should these be fully mainstreamed in across the service in the future, and replicated in modified form at different points of the ante-natal pathway. This may therefore help bring about further service savings by reducing the front-line establishment through redundancy or through reduced recruitment. This may possibly undermine the quality of care in the longer-term, unless precautionary steps are taken by service managers to ensure that remaining staff are capable and confident about delivering group bookings and group consultations in the future.

- The group booking/consultation model runs counter to the notion of service continuity, at least in the short-term. Midwives have been mandated to do all in their power to develop and sustain the relationship with the pregnant women they engage with at 12 weeks throughout the remainder of the ante-natal period. The fact is that service continuity is more a myth than reality at both of the sites where interventions were tested. This largely accounts for why front-line practitioners were so fervently opposed to the group booking model (in addition to the dynamics described in more depth under section 6). The group booking/consultation model could potentially hinder the continuity of relationships between pregnant women and health professionals, but in so doing, it creates continuity of relationships between pregnant women themselves, that may in the longer-term transform the relationship between pregnant women and the providers of ante-natal services.

- The MumsTalk social networking platform has the potential to radically transform the nature of the relationship between pregnant women and providers of ante-natal services. The mainstreaming and diffusion of this ICT product may therefore, at some stage in the future, create anxieties amongst health-professionals that non-medical issues and concerns are being dealt with 'outside the system.' This will have to be closely managed in how MumsTalk is rolled-out and eventually mainstreamed, to ensure that the opportunities offered by the product are fully harnessed in a manner that adds value to the contacts between pregnant women and health professionals.

Long-term impact

The service improvement testing has generated powerful learning (described in more detail under section 4), which is anticipated[15] to have long-term impact that is most likely to be manifested by:

- A more holistic and structured approach to service improvement at both test sites, that draws on the lessons the project generated and will share at closure with managers, supervisors and front-line practitioners through a 'top tips' document: this

  will include recommendations on how to: (i) structure engagement at the design and prototyping stage of intervention testing; (ii) engage service-users and front-line practitioners in intervention design; (iii) integrate intervention metrics with existing indicators used to manage the service; (iv) establish evaluation protocols and tools; (v) establish structured decision-making and review mechanisms to manage changes through the PDSA cycle; (v) realise when things are not working and how this should be managed; (vi) scale-up intervention testing; and (vii) build a sustainability strategy for mainstreaming interventions. The long-term impact of our lessons around how service improvement should and should not be conducted will help health professionals at both UCLH and Barts Health to avoid mistakes made during the project, and be more effective at managing service improvement as a whole.

- The progressive embedding of the principles of peer enablement and patient empowerment, advocated by the interventions we tested as well as the ICT products we prototyped, in a way that continues to drive the debate around how ante-natal services will need to change in the future to meet rising demand, and declining funding. The learning descried throughout this report suggests that both of these principles will require a paradigm shift in the operating culture to stand the chance of being sustained and diffused throughout services at both sites. This will require a change in: (i) how front-line practitioners are trained; (ii) the sort of qualities and skills that will define future recruitment policy; (iii) how front-line practitioners view themselves in relation to the service managers and supervisors, and the formal role that they are expected to play in service improvement; (iv) the time, space and support for front-line practitioners are provided with to collaboratively explore how they might effect service improvement; (v) how technological enablement is viewed across the service – this should be part of the solution, not part of the problem; (vi) how service-users are encouraged by health professionals to take ownership of their pregnancy through the technological

[15] The service improvement testing and ICT prototyping did not generate direct evidence of long-term impact of our work on relationships and the quality of service provision as a whole. This was largely attributable to the changes in programme scope described above, and challenges with framing metrics that could appropriately capture long-term impact. Our view of the long-term impact of the work is therefore based on qualitative insights we generated.

opportunities made available to them by the service; (vii) the environment and space within which service-users engage with health professionals – this should be de-medicalised and de-formalised where possible to create a warm, welcoming and collaborative physical culture. The long-term impact of social improvement interventions and ICT products will help to sustain the dialogue on how health providers can best support pregnant women to become empowered service-users, and moreover, how they can support women to support each other through their pregnancy through peer enabled solutions.

- A growing commitment of health-professionals to wider technological enablement, producing greater front-line and user demand for technological innovation. The piloting and prototyping of the MyPregnancy Journey website (and soon the MumsTalk social networking platform) shows that health-professionals are generally slow to embrace technological change, suggesting that they prefer to share information and engage with pregnant women through traditional channels. Our learning also shows that health-professionals feel as though technological change is 'being done to them, rather than with them.' A new inclusive and collaborative approach to developing technologically-enabled solutions helps to build a critical mass of interest and pull from the front-lines that, in turn, helps to dispel the natural anxiety about technology. The long-term impact of the ICT prototyping will help to establish the case that technology offers new opportunities and channels through which service providers can enable pregnant women, and ultimately, that technology should not be feared, but embraced in a collaborative fashion.

Building skills for changed relationships

The importance of developing skill-set across the wider clinical workforce became apparent at a relatively late stage of the service improvement testing at both test sites. This perhaps explains why both local project delivery teams were geared towards addressing the targeted skill development needs of groups of health professionals directly involved in the service improvement activity. This effectively means that the long-term impact of the learning we generated around the skills that would be required on the front-lines to effect a change in relationships, is not likely to be directly reflected in how workforce development and recruitment strategies are likely to be reframed in the future. Our advice to health professionals involved in driving service improvement activity in the future is to think about the key priorities for workforce re-development as early as possible in the test cycles, preferably after the case for the intervention model has been established and accepted by the wider community of accountable stakeholders. The learning generated during the project does show, however, that we have established a strong case for addressing the following workforce development needs across ante-natal services in the future:

- The need to develop front-line facilitation skills;
- The need to develop confidence for engaging groups of pregnant women;
- The need to develop a community of front-line practitioners, that can share in and exchange the methods, tools and aids used to successfully engage groups of women. There is not a 'one-size-fits' model to doing this – the best approach lies in sharing, comparing and empowering one another;
- The need to develop service improvement skills. This shouldn't assume the current 'dry' form of health-professionals being lectured on the 'science' of service improvement, but should instead focus on the application of core principles of service improvement to practical problems and challenges;
- The need to develop front-line ICT literacy and confidence, particularly around technological innovation and how this can add value to the interactions between the ante-natal service and the pregnant women it seeks to support.

Building skills for engaging service users in service improvement

The co-production and ICT workshops workshops established the case for user engagement within the wider context of the service improvement process. The learning emerging from co-production suggests that health professionals do not have the necessary skill base and confidence to engage with groups of women, service managers and obstetricians to provoke a collaborative debate on what needs to change, why and how. The entrenched division between the clinical status bestowed on obstetricians, service managers and midwives, mean that the latter tend to feel stifled and inhibited from challenging their colleagues in a constructive and collaborative way, which in many ways suppresses their space to view their concerns and thoughts on how services may be improved. Collaborative, multi-disciplinary thinking about the challenges facing services as well as the possible solutions that might be tested through service improvement methodology is lacking from the operating environment. This makes service improvement the prerogative of the managerial elite, and is so doing, undermines the chief principle of the service improvement philosophy – empowering the front-lines to drive service changes. The long-term impact of the project is therefore likely to increase demand for co-production across ante-natal services at both sites, and contribute to the debate on how services can be improved by drawing on a wide range of multi-disciplinary and user insights. It should be noted, however, that greater user involvement in service improvement requires a paradigm shift in operating culture and managerial commitment to empowering the front-lines to drive change. More work will therefore be required to create the conditions where this shift can take place, and where this can ultimately be sustained over the long-term.

Impact and wider system change

The change in how ante-natal services are being commissioned and delivered (see section 1) effectively means that pregnant women will need to become more self-sufficient and empowered in managing their pregnancy than has been the case. Some might therefore argue that the move to peer enablement and patient empowerment was inevitable, and that the anticipated impact described above would have somehow cathartically emerged anyway. The degree of anxiety and pressure on the services observed during the project suggests, however, that health-professionals and service providers more widely, lack the skills, tools and collaborative thinking needed to make this transition. It is therefore suggested that the wider impact of change within the health-care system is not, alone, sufficient in making pregnant women more empowered. The pressure of systemic change can provide a useful catalyst to a wider dialogue of how ante-natal services should evolve in the future, but the way in which this dialogue takes place as well as the way in which this translated to practical service improvement outputs is contingent on the degree to which the underlying operating culture can under a paradigm shift.

3.3 Economic Impact

Service improvement is not free

Key learning and experience generated by the M(ums)-Power project revealed the prominence of the service efficiency agenda in driving service improvement on the front-lines, coupled with the challenge that this poses for maintaining focus on the aspiration to improve patient experience outcomes. This dynamic makes economic assessment modelling all the more critical to the quest of getting clinical decision-makers and managers to commit to continuing service improvement. Having access to reliable and robust data that can evidence budget and resource utilisation savings helps those driving change in securing the buy-in for testing service improvement

interventions. Having access to reliable intelligence that blends qualitative and quantitative data on how the intervention has/is likely to benefit patient experience outcomes helps to galvanise the all important support for change on the front-lines. Having access to data that paints an accurate an reliable estimate of the resources required to bring about a service improvement change helps to dispel myths and complications encountered during testing and scale-up activity and makes a clear statement to service manages and budget holders: service improvement and the benefits that these is projected to generate is not free and, as any other change process, requires an up-front investment.

Challenge of developing a model

Economic assessment modelling is a technically complex and demanding undertaking, that requires a considerable amount of effort. Developing a model that is sufficiently reliable to galvanise buy-in, commitment and investment in service improvement activity invariably detracts focus from the intervention design and prototyping work. This was particularly striking at the co-production and service improvement design stage, and effectively meant that the work of developing a model was subsumed by other more competing priorities. Developing a light-touch working model at the initial co-production/intervention design stage would have helped to provide a more stable basis for articulating the monetary benefits that the intervention was hypothesized to bring about but also to establish a clear 'ask' of the resources required to make this possible. The project delivery team didn't initiate the process of developing a model for economic assessment till relatively late on in the project life-cycle, and didn't set the expectation of the operational resources that would be required to make an improvement as explicit as it could have done. This meant that the demands associated with initiating and scaling service improvement had to be managed in a reactive rather than a pro-active fashion that itself increased the scope of the clinical engagement work. The key learning emerging from this work suggests a need to establish a working model for economic assessment at the outset of service improvement work, and for this to be used to drive the work.

Economic model for the M(ums)-Power socialised pregnancy

The expertise and support provided by OPM helped the project delivery team develop a rudimentary model (figure 22) that establishes the basis for a simple economic assessment in line with HM Treasury guidelines. The model sets out a set of underlying assumptions that are used to narrow the framework of variables that will be used during the closing staged of the project life-cycle to provide a monetised estimation of the direct and indirect costs of initiating and scaling one M(ums)-Power service improvement intervention, as well as the benefits and outcomes that this generated in providing the basis for (i) cheaper services, (ii) empowered users, and (iii) changed relationships. This is largely contingent on the continued support and expertise of OPM local service managers at both sites.

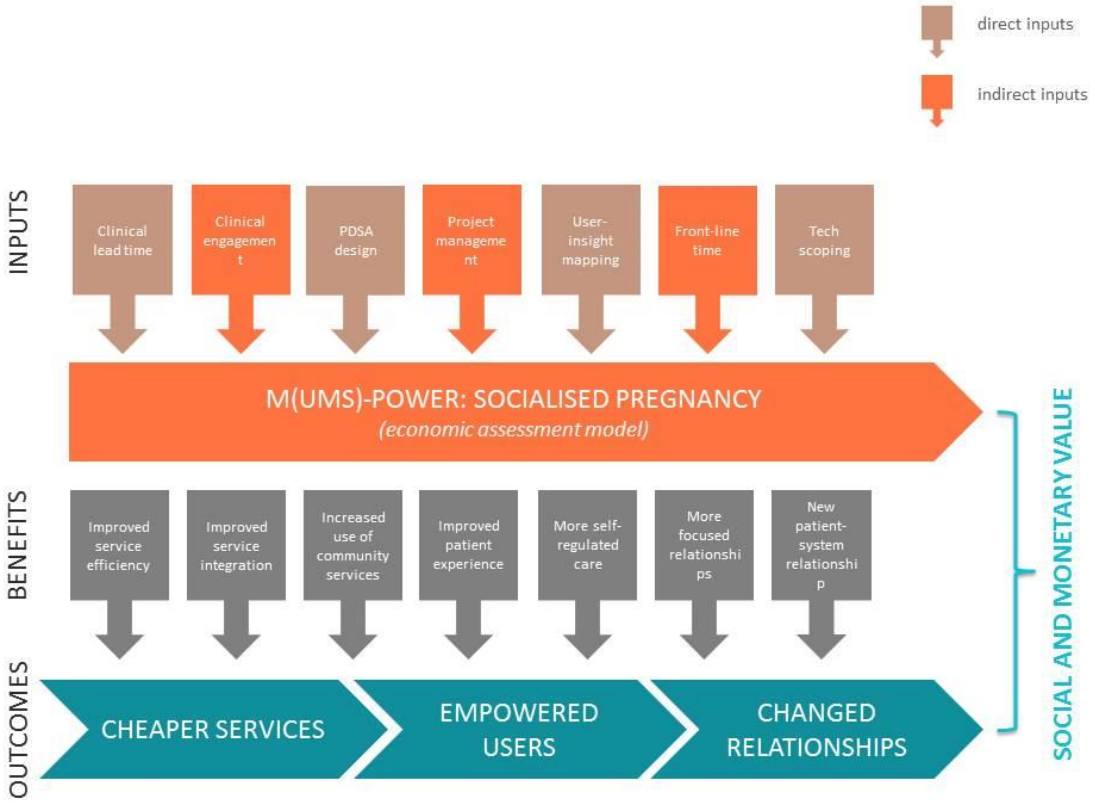


Figure 22. *M(ums)-Power socialised pregnancy economic assessment model.*

Table 6 provides a more detailed outline of key activities and associated costings relating to the inputs depicted by figure 9 as well as the underlying assumptions for analysis.

Direct inputs	Key Activities	Cost (£)	Comment
Clinical lead time	Participate in co-production workshops	Tbc	No. workshops dependant on scope of intervention testing
	Participate in intervention design	Tbc	
	Lead intervention prototyping	Tbc	Dependant on PDSA testing scope and frequency
	Implement and coordinate evaluation tools	Tbc	
	Engage with front-line practitioners	Tbc	
	Engage with service managers	Tbc	
	Contribute to design of intervention tools	Tbc	Dependant on utility of existing tools
PDSA design	Review/agree changes for coming PDSA test cycles	Tbc	
	Scale-up requirements mapping	Tbc	Dependant on service setting
	Scale-up implementation	Tbc	Dependant on service setting
	Scale-up transition and training	Tbc	Dependant on service setting
User insight mapping	Co-production workshop materials	Tbc	
	Co-production workshop collation	Tbc	

	and write-up		
	User surveying	Tbc	Dependant on critical sample numbers
	User revisit and review	Tbc	Dependant on critical sample numbers
Tech scoping	Requirements scoping	Tbc	
	Existing tech architecture scoping	Tbc	Dependant on scope of integration into existing systems
	Solution development	Tbc	Dependant on number of development iterations
	Prototyping	Tbc	Dependant on number of prototyping iterations
	User acceptance testing	Tbc	
	Marketing prototyped products	Tbc	Dependant on expected reach of solution
Indirect inputs	**Key Activities**	**Cost (£)**	**Comment**
Clinical engagement	Initial engagement with clinical directors	Tbc	
	Initial engagement with service managers	Tbc	
	Initial engagement with the front-lines	Tbc	
	Ongoing engagement with service managers	Tbc	Dependant on scope of resistance to change (see section 4.2)
	Ongoing engagement with front-lines	Tbc	Dependant on scope of resistance to change (ibid)
	One-off engagement with ICT managers	Tbc	Dependant on scope of resistance to change (ibid)
Project management	Participate in co-production workshops	Tbc	No. workshops dependant on scope of intervention testing
	Lead intervention design	Tbc	
	Lead evaluation design	Tbc	
	Work with service managers to define common/viable measures	Tbc	
	Coordinate engagement	Tbc	Dependant on scope of resistance to change (ibid)
	Coordinate tech scoping	Tbc	
Front-line time	Participate in front-line engagement sessions	Tbc	
	Participate in re-design of intervention	Tbc	
	Provide evaluation feedback	Tbc	

Assumptions

The above model provides a rudimentary means of assessing both the direct and indirect costs required to initiate and scale-up the testing of ONE intervention and ONE complementary technology enabler only. The indicative costs listed above will vary depending on the complexity and intensity of the intervention being tested, as well as the degree to which this results in

resistance and push-back across disparate clinical groups (see section 4.2). The model excludes the following variables:

- Overheads associated with the provision of clinical facilities and equipment for intervention testing.
- Overheads associated with staff on-costs, incurred by the intervention test team and participating front-line practitioners.
- Staff costs associated with the delivery of routine care not covered by intervention testing.
- Staff costs associated with the time provided by clinical directors, service managers and operational supervisors in the initiation and scale-up of intervention testing.
- Overheads associated with the recruitment and appointment of the intervention test team.
- Overheads associated with the office facilities (including ICT, telephone and building maintenance) used by the intervention test team during the initiation and scale-up of the intervention in question.

***Table 6**. Direct and indirect inputs: M(ums)-Power socialised pregnancy economic assessment model.*

Table 7 provides a more detailed outline of key activities and associated costings relating to the inputs depicted by figure 9 as well as the underlying assumptions for analysis.

Benefits	Key Outputs	Cost (£)	Comment
Improved service efficiency *(chief outcome: cheaper services)*	Reduced clinician in-appointment time	Tbc	As compared to MW hours per standard episode
	Reduced non-core contact	Tbc	Non-core: not stipulated by NICE guidelines
	Reduced incidence of DNAs	Tbc	DNAs across the pathway at particular point of pathway
	Increased patient put-through	Tbc	Difficulty in linking this to the impact of the intervention
	Enhanced use of flexible, creative and facilitated approach to service provision on the front-lines	Tbc	Relating to workforce development and training
Improved service integration (chief outcome: cheaper services)	Integrated service planning	Tbc	Ante-natal, post-natal, community services
	Integrated allocation of resources	Tbc	Ante-natal, post-natal, community services
	Reduced cost of service provision for vulnerable patients	Tbc	Vulnerable: presenting high-risk at booking
	Economies of scale and utility for information pushed to patients across service boundaries	Tbc	Production, publication and distribution of information
Increased used of community resources *(chief outcome: cheaper services)*	Reduction in cost per patient per ante-natal episode	Tbc	Associated with moving care from primary to community settings where costs are comparatively lower
	Reduction in demand on clinical resources	Tbc	For patients opting to move care into community
Improved patient experience	Enhanced service personalisation	Tbc	Indicators required
	Enhanced peer enablement	Tbc	Support from physical and virtual networks of pregnant

(chief outcome: empowered users)			women/women who recently gave birth
	More meaningful interaction with the service	Tbc	
	Information providing tailored around the needs of the patient	Tbc	
More self-regulated care *(chief outcome: empowered users)*	Greater capacity for self-management of risk during pregnancy	Tbc	
	Reduced cost associated with unmanaged risk during pregnancy	Tbc	Relating to high risk presented at booking
	Reduced incidence of non-core contact	Tbc	
More focused relationships *(chief outcome: changed relationships)*	Enhanced clinical focus on acute pregnancy risk factors	Tbc	Relating to high risk presented at booking
	Enhanced service continuity	Tbc	Relating to continuity of care by one provider or team, rather than one health professional
New patient-healthcare system relationship *(chief outcome: changed relationships)*	Requires further investigation		

Assumptions

The above model provides a rudimentary means of assessing the benefits emerging from full-scale implementation/mainstreaming of ONE intervention and ONE complementary technology enabler only. This model is principally focused on the short-medium term benefits rather than long-term benefits of full-scale implementation/mainstreaming of the intervention, which are invariably more difficult to link to the causality of the change being made. The model excludes the following variables:

- Exogenous benefit reaped by external service providers, including neighbouring trusts and third sector providers that are involved in providing support during pregnancy.
- Longer-term parental benefit experienced following birth and transition into the early years pathway.
- Ergonomic gains brought about by enhanced service integration.
- Any possible reduction in workforce resulting from enhanced service efficiency.

Table 7*. Benefits: M(ums)-Power socialised pregnancy economic assessment model.*

3.4 Please provide an assessment of the quality and robustness of the data that you have used, including comment on the validity and reliability of your measures, both qualitative and quantitative.

Qualitative research was used to inform our interventions in the form of co-production workshops run with pregnant women and new mums, and with clinicians from UCLH and Bart's Health. From these workshops we collected in-depth qualitative data on

women's and clinicians' experiences of maternity services. These insights provided a rich and detailed picture of the user experience of maternity services – something which can not be gathered from standard questionnaires such as the CQC Maternity survey. Women attending these workshops were not always representative of women attending antenatal care. For example, the majority of the women taking part had already had a baby, rather than being pregnant at the workshop, which means that there could be recall bias in the way they remembered their experience of antenatal care.

While testing group appointments at booking and 16 weeks we have collected quantitative and qualitative feedback from women and clinicians using questionnaires. There were overarching and site-specific barriers in obtaining robust data.

We used the Consultation and Relational Empathy (CARE) measure to assess the change in the relationship between women and their midwives. This measure was useful for the purposes of this project as one which focused on changing relationships but this is not a standard measure that services use or are evaluated on therefore it did not provide the evidence of improved quality that the service managers could recognise.

One of our key process measures was total combined appointment time – but it was difficult to measure this consistently at UCLH as some midwives sent women to have their blood test in the middle of their one-to-one while they wrote up notes, and others sent them after the appointment. Midwives who did the former consistently had longer combined appointment times but this was not recorded in the data collection process.

At both sites our evaluation of group appointments faced a series of barriers. High levels of satisfaction with both our intervention and current standards of care, as based on our baseline surveys, suggested that our questionnaire was not sensitive to fluctuations in patient experience. This may be because of the questions were not specific enough, low pre-existing expectations of care or because women were completing the questionnaires on site when they were rushing to leave and before they had had time to reflect on their experience.

At both sites we also did not have sufficient numbers to test whether differences between one-to-one and group appointments were statistically significantly. With larger numbers this may have been possible.

It is difficult to ascertain from the group appointments whether these results are generalizable to a wider group of women, especially due to the small numbers that we tested with. The women who took part in our pilot did come from a cross-section of ethnic and age groups though. However, we did not record whether women had additional medical or social need – a more in-depth study is needed to assess the appropriateness of group appointments for women with different levels of medical and social needs.

At UCLH barriers to collecting data were particularly associated with a lack of staff engagement. When group booking appointments were run one a morning then the project team could ensure that all the questionnaires were filled out and collected. However, when the group bookings were scaled up to whole mornings of back-to-back group bookings the lack of engagement and support from both clinical and administrative staff meant that the return rates for questionnaires declined. This lack of

staff engagement also impacted on the ability of the project to collect the necessary baseline data needed for a robust study. This relied on the receptionists handing or sending out our baseline questionnaire to women attending a one-to-one booking appointment.

The Barking Birth Centre did not have such significant barriers with staff engagement around evaluation. This was because the small number of clinicians and receptionists, and less hectic nature of the centre, meant that it was easier to engage all the staff and for them to ensure women returned their evaluation forms.

4. Discussion/ learning

4.1 Summary

While the interventions have not been scaled up at both sites we feel that both the process of developing these interventions and that the interventions themselves have had a positive impact.

The co-production process has shown us that engaging service users and clinicians and understanding their experience of services is an effective way of developing rich insights on which to design interventions.

Group appointments can be an efficient way to support women to build peer networks, deliver information interactively and to provide the time for women's questions to be discussed. The success of group appointments at booking is unclear – women did not tend to interact with each other and the amount of information being delivered meant that the sessions tended to be didactic rather than interactive. Group appointments at 16 weeks seemed more promising, with women seeming more comfortable to talk to each other and ask questions. Introducing group appointments means organisational, administrative, workforce and culture changes which should not be underestimated.

The failure of the initial technological solution showed that for a project to be successful it should not be technology focused but technology enabled. Developing technologies that enable the group appointments (by enabling access to information and supporting peer networks) has meant that these technologies have been developed late in the project lifecycle but the initial feedback suggests that they improve women's experience of services and help to address some of the issues with antenatal care services that the co-production workshops identified.

Underlying the inability to effectively measure and implement group appointments was the lack of buy-in from frontline midwives. We did not a find a way to garner the enthusiasm of the midwives and sustain this enthusiasm throughout the project. It is difficult to change the relationship between providers and recipients of medical care if you have not sufficiently engaged both of these groups.

We have learnt that you can not focus on changing relationships if you do not address the underlying culture that professionals are working within. We realised too late in the project how difficult a working environment midwifery is, and that bullying in the workplace is rife. In hindsight our project should have also worked to change this culture rather than solely focusing on pregnant women.

Many of the challenges also came from the on-going problems of the wide scope of the project. Working across two sites and trialling multiple interventions resulted in a project that often lacked focus – a narrower set of interventions could have provided this focus.

Finally, measurement has been problematic throughout the project. Our focus on relationships and measures such as the CARE relationship resulted in us designing and using a questionnaire that the service managers did not see as relevant to their jobs as the questions did not directly map onto the measures that are used to assess their services.

4.2 Please tell us about your achievements, the challenges and the things that didn't work out quite as you planned.

The scope of this project shifted considerably throughout the project lifetime – however the underlying aim of both the initial proposal and the interventions that were tested was to improve the relationship between pregnant women, their families and antenatal care services. The aim was to move away from one-size-fits-all services to one where women are empowered to ask questions, have ample access to reliable information and where their confidence and skills for managing their own health and pregnancy are supported. The project has developed a package of interventions which together have the potential to provide a very different antenatal journey – for many of these their full impact will probably only be evident after the project lifetime. However, there have also been significant challenges in both initiating and sustaining these interventions.

Successes

- The co-production process generated rich, in-depth and credible insights into the success and failings of the current model maternity services. The workshops with pregnant women, new mothers and clinicians, as well as in-depth one to one interviews, enabled us to look beyond standard CQC questionnaires and begin to understand how the user experiences antenatal care. For example one new mum, 23, who came to one of the workshops, told us "*No one tells you how lonely pregnancy can be…I don't have many friends with children, and colleagues are full of fright stories from their own pregnancies 15-20 years ago*". Another told us "*I felt passed around from person to person…I felt like a burden*". We found that the stories and quotes that came from these workshops struck a chord with both service managers and front-line midwives and helped to engage them with the changes we wanted to make and to legitimise the interventions.

- From this co-production process, the project team successfully established that peer-to-peer relationships as well as clinician-patient relationships were important to many pregnant women. The credibility of the co-production process meant that the project established in these services that peer-to-peer networks – whether virtual or physical can add value to women's experiences of antenatal care.

- The rationale behind group appointments was accepted and embraced by many, though not all, of the clinicians that we worked with. At the Barking Birth Centre many of the midwives have begun to see the group appointments, at both booking and 16 weeks, as the "gold standard" of care. At UCLH while the front-line midwives were not as supportive of the group booking appointments, they were generally more supportive of group 16 week appointments, where they saw more scope for group interactions.

- From our testing of group appointments we have developed in depth understanding of the organisational, administrative and cultural changes needed to successfully implement group appointments. Group appointments are a very different model from traditional care and require a suitable space, adequate training for midwives and a move away from traditional patient-clinician relationships. Testing group appointments at two different stages of pregnancy revealed that group appointments later in pregnancy seemed to be more effective as there was less time pressure, and women were more eager to interact with one another.

- The initial feedback on our ICT work has been positive and suggests that use of technology can help to address the information asymmetry that exists in maternity care and support virtual peer networks. The '*Newham Mums Know Best*' Facebook group established that women not only valued online groups to share information and support each other, but that the security and confidentiality concerns did not seem to be a significant barrier. The initial feedback on the MyPregnancy Journey website suggests that well designed online information can improve women's experience of care:

  "most information is out there on the internet but it is very fragmented and not always hospital specific. I personally found hospital pretty daunting and not sure what to expect, this new website allows all of the information relevant to your hospital all in one place, easy to access, clear and user friendly"

Challenges

- Throughout the project the ambitious scope has been problematic. The initial proposal was very broad and its aim was to completely transform antenatal care services. Working across two sites, testing multiple interventions has often meant that the project team has been spread too thinly and that the ability to successfully implement these interventions had been impaired.

  Mitigating strategy: using the co-production insights to prioritise service improvement work, reflecting on the operational/logistical challenges encountered in overcoming challenges and prioritising resource allocation to activities with a high impact-moderate effort dynamic. This strategy largely informed our interest in pursuing the group consultation intervention.

- One significant challenge was engaging staff and sustaining this engagement. The change in project focus meant that many people who engaged in the early workshops became confused about the project's aims and disengaged. We invested substantial time and effort into engaging both frontline staff and service managers. Newsletter updates were sent to staff after every test cycle and there was a subgroup of service managers at both sites to manage the site-specific decisions. At UCLH after significant staff resistance to group appointments was recognised we ran development workshops to get in-depth feedback from midwives on how the group appointments could be improved. These workshops were productive but came too late in the testing process for the feedback to be incorporated.

  Mitigating strategy: involving the wide array of stakeholders (ranging from heads of service, service managers to senior supervisory midwives and front-line practitioners) in honest and candid discussions about the source of resistance, anxieties, fears as well as solutions to meeting these. Attempts at doing this at an earlier stage of the service improvement prototyping were unsuccessful at UCLH, largely because the service managers were of the opinion that these changes were going to be mainstreamed regardless of the learning. When the resistance reached a tipping point, only then was the local project delivery team given to mandate to proceed with engagement workshops with staff, on the proviso that staff would be released to attend these – this promise and commitment never materialised,

meaning that the structured engagement activities that the local project delivery team staged, were delivered to a very small number of front-line practitioners, without a visible backing of the management.

- From the initial workshops it was clear that engaging staff to change their working practices would be difficult. The group of practitioners who attended the workshop at UCLH represented a wider mix of entrenched professional views than the workshop at Newham, which monolithically consisted of community midwives, perhaps explaining the disparity in views articulated at both workshops. Particularly at UCLH, there was plenty of 'no time for anything new', 'tried that' and 'it can't work here', in the workshops and this resistance to change has persisted throughout the project. The antenatal service manager explained part of this resistance:

  "*The antenatal clinic is run by midwives who can't work in the more acute areas. They are not the newly qualified energetic midwives. It is seen as a dead end, grave yard area to work*".

  Mitigating strategy: future co-production workshops would need to appeal to a wider diversity of stakeholders. Planning for co-production workshops would need to factor this into early planning. Unfortunately, the co-production phase had been completed at this stage, so this strategy couldn't be implemented.

- A challenge throughout this project has been the limited clinical lead time resourced. In both sites we often ended up relying on service managers and administrative staff to help with the project without being reimbursed for their time or effort. In addition to this at UCLH our clinical lead did not work in the antenatal clinic therefore it was difficult for her to influence change on the ground. The configuration of these on the ground teams may have been more effective if we had recruited clinical leads from the antenatal clinics, had paid for more clinical lead time or by also employing a series of clinical champions.

  Mitigating strategy: grow the community of practice committed to the service improvement activity, and the wider change at UCLH by engaging 2-5 M(ums)-Power Change Champions to work with the clinical lead (see resource under section 5.1). Attempts at discussing how this might be framed and developed with the Head of Midwifery and senior supervisory midwife at UCLH did not produce a favourable outcome. It was intended that the proposal would generate a discussion at the UCH Sub-Group, and allow its members to frame how Change Champions might be deployed to maximise impact and minimise disruption and cost to the service. The idea was informed by 2-5 midwives being allocated some time during the working week to collaboration with the clinical lead. The proposal was flatly rejected in light of the decision to mainstream the group booking intervention (which was subsequently reneged on).

- Throughout the project there was an on-going tension between service efficiency and patient outcomes. Service managers tended to be more motivated by efficiency savings, while front-line clinicians were more motivated by women's needs. This tension meant that when decisions about the group appointment model were being made the most time-efficient model was chosen, rather than the model which allowed time for women to interact and ask questions. This need to make service

efficiencies was felt to be particularly pressing due to the incoming maternity pathway tariffs.

Mitigation strategy: the project delivery team attempted to integrate the data pointing to service efficiency and patient outcomes, into one narrative that intended to make the case for cheaper and better service provision. Attempts were also aimed at enriching the qualitative insights, and developing compelling user stories. Unfortunately, the user story insights didn't materialise in time for this engagement, and the local service managers continued to prioritise service efficiency over patient outcomes. This was particularly striking with the group consultation intervention, which pointed to considerable patient outcome gains, that were, in by themselves, insufficient in getting local managers to commit to the scaling-up of service improvement prototyping work, in fear of it being to disruptive to service provision.

- Wider changes to both the NHS and local health services also proved challenging for this project. For example the Bart's Health Trust merger resulted in a high staff turnover and a need to continuously re-engage with senior decision makers. As mentioned earlier the incoming antenatal care pathway tariffs were both an enabler as managers were keen to try new models and new ways of providing care but also a barrier as the emphasis was on efficiency rather than effectiveness. Workforce adjustments and low staff retention rates at UCLH also meant that we didn't have the basis for engaging with the same group of health professionals. This meant that we had to provide sufficient resource to establishing new relationships, which we found challenging and difficult given the lack of prominence that our agenda was afforded.

  Mitigation strategy: ensuring that the case for change evolved with the shifting context at both Trusts and more widely across the NHS. Unfortunately, the level of uncertainty (felt particularly at Barts Health) permeated the rank and file staff we engaged with, who themselves had limited on the direction of travel. The most effective strategy for dealing with this would have been to re-engage with the clinical directors. Despite this, the case for change was given a major face-lift in September 2012, and helped to provide the framework for subsequent service improvement activity. Developing collateral and artefacts to sustain and embed the agenda would have been effective if this was in someway embedded within the workforce recruitment and development strategy -- this is not something we had scope to explore in more depth, but would have certainly done so if we can to repeat the process in the future.

- Measurement has also been a significant challenge and barrier. Because of the emphasis of the Closing the Gap programme on changing relationships, many of our measures focused on relationships. These measures failed to resonate with service managers as they did not map directly onto measures that their services are evaluated on such as the CQC patient experience questions.

  Mitigation strategy: it would have been immensely helpful, if THF provided the team with a broad-based basked of indicators for measuring changing relationship at the outset, and if the OPM evaluation support was targeted at developing intermediate measures with the teams at the outset of the process. This was never the case, and the OPM support for helping to frame metrics for service improvement testing in

January 2012 was weak at best, particularly given the lack of availability of the OPM consultant allocated to the project, as well as the subsequent change in the person allocated to this responsibility at the time the service improvement work momentum was peaking.

- The challenges described above were mostly underpinned by one overarching challenge which we found difficult to resolve – resistance to change within the NHS. Our learning shows that resistance to incremental change (group bookings, group consultations) and radical change (MumsTalk) seems to have operated at senior management ranks, operational management ranks as well as the front-lines. The rhetoric committing stakeholders to a conceptual notion of what service provision could like was largely unmatched by practical follow-on action. This is largely attributable to the sheer volume of competing agendas and case-work, which meant that the M(ums)-Power agenda was never fully embraced nor seen as a vehicle to realising the priority of delivering 'more for less.'

  Mitigation strategy: our mitigation strategy consisted or re-engaging with the clinical directors who initially sanctioned the M(ums)-Power work at both sites, and in so doing, creating lines of accountability and support for heads of service/service managers to make service improvement a prominent order of business. We were anticipating that this would enhance the buy-in with the heads of services and reduce the level of resistance experienced when following-up agreed actions/decisions. This would then, in turn, increase the prominence of our agenda with senior practitioners and front-line professionals, who we aimed to support through the engagement work described in more detail above.

4.3 Interpretation

In addition to having the necessary staff buy-in this project has demonstrated that there are some pre-requisites to running successful group appointments in antenatal care.

An on-going challenge at UCLH was the lack of space that could accommodate groups as almost all the space was designed for one-to-one consultations. The clinical lead felt that the space the group appointments takes place in must not only be big enough but be a warm, welcoming space which sets the tone of the appointment, is conducive to group interaction and can also include a variety of visual aids and educational tools.

Some midwives also thought that group appointments would be more suitable in a community setting. At large hospitals women come from a wide area therefore it can be hard to build as the women live across London. In a community setting women could meet other women who live locally and who they might want to stay in contact with. In addition to this one midwife commented that the hospital itself sets women's expectations: "the minute a woman walks into a hospital she expects to be treated like a patient, the environment sets their expectations".

All the midwives agreed that having some intelligence on the needs of the pregnant women before they presented for group appointments was important. This could enable the service to make additional arrangements for women who didn't speak English or

needed a longer appointment because they had additional medical or social needs. This would require some sort of pre-appointment questionnaire or triaging system.

Using this information to then segment women may improve the level of interaction in group appointments. This segmentation could be based on any number of factors including parity, language spoken and medical needs. For example in the Barking Birth Centre the 16 week group consultation was successfully tested with women with gestational diabetes. At UCLH the 16 week group consultation was tested separately with first time and second time mothers as it was felt that they would have different concerns and needs.

The experience of the clinical leads also suggests that focusing group bookings on first time mothers may be more effective as they are more likely to be overwhelmed with information and be seeking reassurance. Multiparous women seemed in general to be more interested in quick appointments than depth, as their experience often meant they were better prepared.

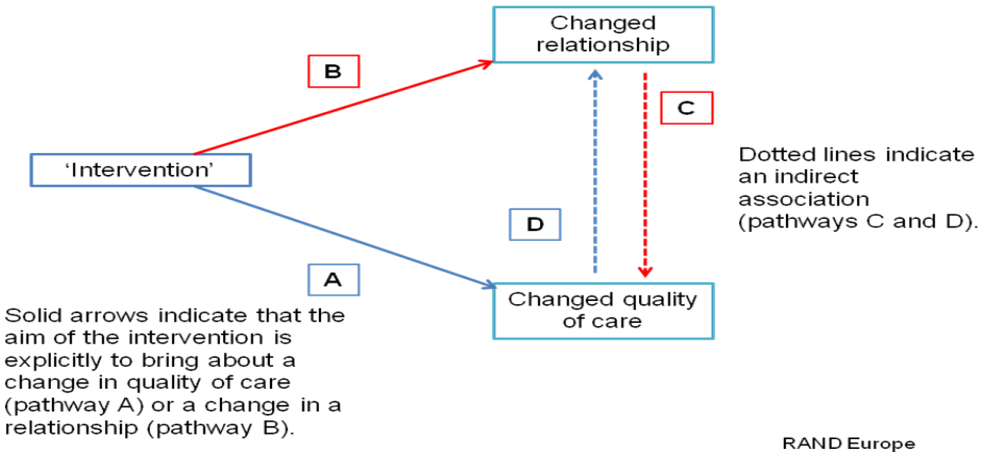
Midwives need to be supported to deliver group appointments. This means training them so that they feel confident not only speaking to groups but also in facilitating group interactions. It also means co-designing the content of the appointments with groups of midwives so that they feel they have ownership of the appointments and that the content is the gold standard.

Ways to sustain communication between women who meet at group appointments should be considered. This could simply be encouraging women to exchange emails or using a bespoke social networking site such as MumsTalk. Using technology to support women to continue these relationships means that they can be more than just a one-off interaction.

The group appointments should be as dynamic as possible for example by using simple ice-breaker activities and visual aids or technology to bring information to life in a meaningful way.

An additional observation worth noting is the clash between the notion of service improvement and innovation methodologies considered for effecting change during the co-production phase. The perception of innovation within the health-care system is narrow as compared to the perception of innovation across other realms of public service delivery. The definition of innovation most frequently deployed in health-care settings is less disruptive and less radical, and is frequently (and inaccurately) mischaracterised as ‘improvement.’ Service improvement, itself, is more incremental, less disruptive, less radical and less holistic than innovation. Stakeholders external the health-care system are therefore likely to deploy different methods to stakeholders internal to the health-care system and should first decide on the scope of change they wish to effect before settling on a methodology they wish to use to bring about such change.

4.4 Link between interventions, changed relationships and quality of care



The experience and learning generated by M(ums)-Power project suggests that the key driver for changing relationships and, in turn, improvement in quality of patient outcomes is, at the very fundamental level, related to a change in culture. A shift in culture cannot occur without a mandate for change being issued by senior clinical leaders and decisions makers, and without tangible evidence of this translating to practical outcomes on the front-line; regardless of whether this is manifested by changes in service effectiveness or patient experience outcomes, or both. The M(ums)-Power experience therefore naturally suggests that it is culture change that drives changes in relationships and ultimately quality of care outcomes. Service improvement interventions are therefore seen more as the 'vehicle' that allows mandate for change to be transposed into practical shift in culture (figure 23), rather than a driver of changed relationships in themselves. Our experience shows that service improvement intervention activity rarely leads directly to changes quality outcomes (thus nullifying relationship A). Our experience also shows that service improvement activity, on its own, is rarely able to bring about a tangible and sustained change in relationship (thus questioning relationship B).

Even the most successful of service improvement interventions are, by themselves, unable to bring about wider shift in relationships. This is precisely why service improvement activity cannot be successful in isolation to wider work aimed at shifting

operating and managerial cultures, as well as the expectations that service-users have of the care and support there are provided with. Our experience also suggests that an exogenous shift in the quality of care, rarely translates into changed relationships (thus nullifying relationship D) – this is more driven by a shift in operational culture, workforce development, and recruitment policy internal to the trust and the service. It is worth pointing out, however, that changes in relationship can lead to a renewed mandate for change and, in so doing, create culture shift in itself. Service improvement activity cannot and should not be expected to transform how pregnant women relate to health professionals, the service they are engaging with or the wider health-care system. Service improvement should, instead, be seen as a vehicle by which the commitment to a culture change can bring about tangible improvements in outcomes that are legitimised and optimised by the involvement front-line practitioners and service users through an innovative and continuous co-production process.

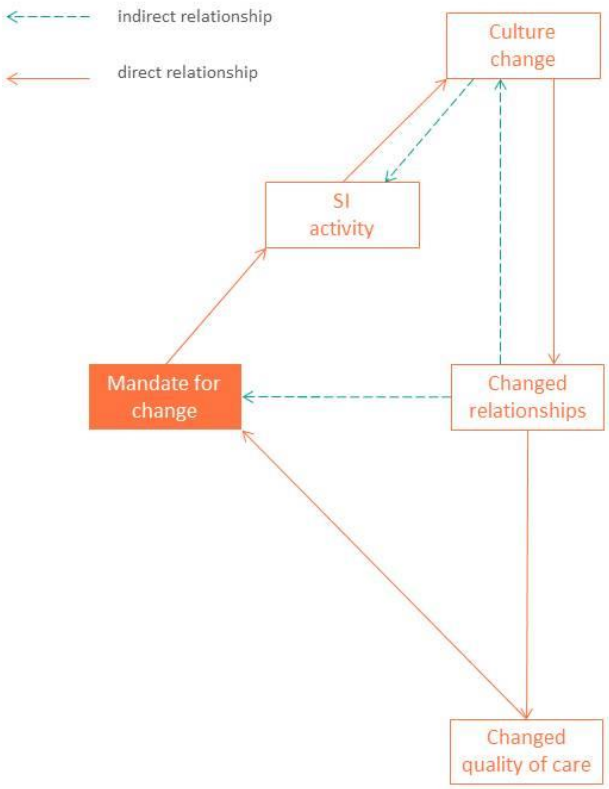


Figure 23. *M(ums)-Power causality of change.*

5. Resources to share

(these were uploaded the CtG Huddle site as per instructions from our SDA)

1. Strategy and engagement

- M(ums)-Power case for change
- ICT prototyping and diffusion strategy
- 'How you feel visual tool'
- Midwife development session plan
- Midwife development session feedback
- PDSA newsletters for UCLH
- Proposal for M(ums)-Power Change Champions

2. Co-design

- Co-design workshops findings report
- QI workshop slide-deck

3. Antenatal pathways

- Pathway for first time mum
- Pathway for second time mum
- Pathway for mother expecting twins
- Information and communication during pathway
- What women felt on pathway

4. Group appointment materials

- **Group booking materials**
  - Food and scans slide deck
  - Checklist
  - Pre-brief for clinicians
- **16 week materials**
  - Labels for 16 weeks
  - Birthing positions posters
  - Life circle tool
  - Agenda setting tool

5. ICT materials

- **MyPregnancyJourney**
  - SurveyMonkey online questionnaire findings
  - Google analytics report
  - Flyer
  - Stickers
- **MumsTalk**
  - SurveyMonkey online questionnaire findings
  - Flyers
  - Stickers
- **Facebook intervention at Barts Health**

6. Pregnancy diaries

7. Presentations and posters

- Intervention at 16 weeks
- M(ums) Power – scope, sustainability and scale
- M(ums) Power RCM poster
- Development sessions poster
- Case for change presentation
- M(ums) Power learning lunch presentation February 2013
- M(ums) Power overview presentation February 2012
- Co-design workshop poster Newham
- Co-design workshop poster UCLH

8. Evaluation

- Original baseline survey
- Original group booking survey
- Revised baseline survey
- Revised group booking survey
- Clinicians survey
- Group 16 week survey
- MyPregnancyJourney survey
- MumsTalk Survey

6. Sustainability

Explain what you have done and plan to do to ensure your work is sustained.

Efforts to sustain the M(ums)-Power interventions encountered a number of challenges resulting from the wider changes in the NHS system, organisational changes at trust level, and operational dynamics at service delivery level. The nature of this dynamic at UCLH was in many ways comparable to that at Barts Health, but required a differentiated strategy to ensure the interventions could be successfully mainstreamed. The approach to meeting this challenge evolved rapidly following the decision to scale-up the interventions, but nevertheless proved fruitful in establishing the basis for continued dialogue this might be achieved. It should be noted that the approach to sustaining, and eventually mainstreaming, the ICT interventions assumed a modified approach that continues to be closely related to the sustainability agenda for the service improvement interventions.

The outcome of sustainability strategy
The head of the maternity service at UCLH made a decision to defer the mainstreaming of the group booking intervention until further notice in February 2013. A parallel decision was made to continue scaled-up testing of the group consultation at 16 weeks, with the intention of fully integrating this into the operating model later in 2013. The Barts Health Sub-Group made a decision to continue with scaled-up testing of the group booking intervention at the Barking Birthing Centre and committed to replicating this at the Newham General Hospital. A decision was also made to continue testing of the group consultation at 16 weeks at the Barking Birthing centre.

The head of maternity at UCLH made a decision to pilot the MyPregnancy Journey website comprehensively for a period of 6-8 weeks, and provided the operational mandate for this work. A decision was also made to pilot the MumsTalk platform across UCLH community maternity teams delivering booking appointments at 12 weeks, at the 24 week growth scan and 34 hypno-birthing groups taking place in clinical settings. The piloting model is very much geared to sustaining the ICT products beyond the natural term of the piloting phase. Discussions around how the ICT products might be prototyped at Barts Health are on going.

The substance of the sustainability strategy at UCLH
The approach to framing the sustainability strategy for mainstreaming the group booking and group consultation interventions at UCLH was primarily driven by:

- The appeal of the efficiency gains evidenced by the interventions to local service managers;
- The desire of the project delivery team to continue engaging the front-lines in shaping the interventions to make these fit with operational realities;
- The desire of the project delivery team to create a shared vision of change that would be visible on the front-lines;
- The condition made by local service managers calling for the disruption made by interventions to be contained.

The initial strategy for sustaining both of these interventions at UCLH was aimed at:

1 Developing transferable tools for use by front-line practitioners;
2 Providing the practitioners earmarked for delivering the interventions with an induction and a hand-over delivered by the clinical lead;
3 Deploying the clinical lead to participate in the scaled-up interventions and providing consulting support and advice to those leading the scale-up activity;
4 Continuing to collate evaluation data and supporting the local sub-group in driving the sustainability roll-out.

The factors driving the challenges described in more detail below, meant that the strategy for sustaining both service improvement interventions at UCLH was modified in February 2013, and was now aimed at:

1. Extracting learning from intervention testing to issue recommendations on the methods/requirements that service managers may consider in the future to make the interventions successful;
2. Providing service managers with relevant tools developed during intervention testing, to aid the process of these being mainstreamed in the future.

The substance of the sustainability strategy at Barts Health
The approach to framing the sustainability strategy for mainstreaming the group booking and group consultation interventions at Barts Health was primarily driven by:

- The desire of local service managers for change associated with the interventions to fit with the wider context of change at Barts Health, not least the on going merger with two neighbouring Trusts;
- The desire expressed by local service managers for the intervention to establish clinical expectations for staff newly recruited to work in the Barking Birthing Centre;
- The desire of the project delivery team to continue engaging the front-lines in shaping the interventions to make these fit with operational realities;
- The desire of the project delivery team to create a shared vision of change that would be visible on the front-lines.

The agreed strategy for sustaining both of these interventions at Barts Health was aimed at:

1. Developing operational scripts that could be tested and eventually mainstreamed at the Newham General Hospital;
2. Deploying the clinical lead to participate in the scaled-up interventions and providing consulting support and advice to those leading the scale-up activity;
3. Continuing to collate evaluation data and supporting the local sub-group in driving the sustainability roll-out.

The substance of ICT sustainability strategy at UCLH
The overarching approach to embedding the ICT products across ante-natal service provision at UCLH was fundamentally centred around the ICT prototyping and diffusion strategy (see 'ICT prototyping and diffusion strategy' in section 5.1). This aimed at raising awareness of the ICT products amongst service-users and front-line practitioners, and then diffusing the use of these products across the wider service provision. The strategy for raising awareness was to be delivered through:

- Information flyers distributed in the ante-natal clinic, including during ante-natal appointments;
- Marketing stickers affixed to the service-users' medical files at the booking appointment;
- Demonstration videos displayed on large flat TV screens in the ante-natal waiting areas;
- Demonstration kiosks situated in the waiting areas and in the staff rooms (this initiative was dropped by the head of maternity);
- Free form tablet demonstrations delivered by the clinical lead engaging with pregnant women waiting for their appointments.

Challenges driving the evolving sustainability strategy at UCLH

Initially, the key challenge to sustaining the group booking intervention and the group consultation intervention at 16 weeks was evidencing that these were able to bring about service efficiencies. The project delivery team stressed the need for this to be complemented by patient experience evidence, but it seemed that the service managers and head of midwifery were principally committed to the service efficiency agenda.

Feedback provided by front-line practitioners (see 'midwife development session plan' and 'how you feel visual tool' in section 5.1) continued to point to disaffection amongst midwives who, by and large, seemed opposed to the group booking intervention on the basis that:

- It didn't provide sufficient scope for one-to-one engagement with the pregnant woman at first contact during pregnancy;
- There was insufficient time to deliver the intervention, as well as the ensuing 30 minute one-to-one
- The principle of the intervention ran counter to the aspiration for improving service continuity for pregnant women.

This feedback proved critical in helping the project delivery team with reframing the approach to winning the 'hearts and minds' of front-line practitioners by:

- Designing and running two workshops for front-line health professionals with a view to unpicking the challenges and framing common solutions.
- Lobbying service managers for the existing clinical shift schedules to be amended to allow (i) more time for the group booking session and (ii) greater capacity for continuity and support across teams of professionals who could more effectively support one another in delivering group bookings.
- Developing a simple demonstration video of how the group booking intervention worked, to encourage front-line practitioners to become 'part of the solution rather than part of the problem;' (this will be provided with the final submission due in June 2013).
- Offering more time and support from the clinical lead to demonstrate the practice principles advocated by the group booking intervention across a number of regular staff meetings to wider the coverage as far as possible, in particular to ensure that those working unsociable hours were included in the dialogue.
- Developing tools to support the change process, by making this easier to digest for front-line practitioners who had an entrenched view of how bookings generally work;

- Exploring and exploiting opportunities for the ICT products to be prototyped within community settings coming under the control and remit of the head of midwifery at UCLH.

Persistent efforts on part of the project delivery team to address the disaffection on the front-lines were met with resistance. Attempts to develop ownership and buy-in at the service management and front-line level were less successful that originally anticipated. This was largely explained by the pre-occupation of service managers with a scheduled CSNT inspection, which led to a prorogued period of hiatus between early December 2012 and February 2013, that could have been exploited to engaging with the front-lines, re-designing the intervention and ultimately scaling its reach. The decision made by the head of midwifery following re-engagement in early February 2013, was for the ICT prototyping to continue, for small-scale testing of the group consultation intervention to continue, but for the group booking intervention to cease until further notice, set beyond the term of the M(ums)-Power project. This ultimately meant that the project team lack the mandate to continue dialogue with front-line practitioners around how the group booking might be developed. Seeking to involve front-line practitioners in dialogue can only be successful if there is sufficient mandate and buy-in at the supervisory and managerial level. This is critical to providing the credibility and legitimacy to the change process, and to ensuring that staff are freed to participate in workshops, co-design sessions and prototyping synthesis activities. Unfortunately, this never proved to be the case at UCLH, undermining our sustainability efforts.

Challenges driving the evolving sustainability strategy at Barts Health

The patient experience evidence generated during testing of the group booking intervention seemed to play a more central role in shaping the sustainability activity at Barts Health than it did at UCLH. The key factors driving the challenge to sustaining the interventions at Barts Health can be mostly attributed to:

- The flux and change in the ante-natal workforce, including the head of service, clinical supervisors and front-line practitioners. This was particularly striking at the Barking Birthing Centre, where staff were being recruited into posts at the time of intervention testing. This meant that this centre was not operating at full capacity, affecting fidelity with the intervention operating model.
- The tri-trust merger initiated in April 2012, and the uncertainty of the configuration of responsibilities across what became the biggest NHS trust in England. This meant that service managers didn't have the necessary mandate to authorise the scaling and eventual mainstreaming of interventions.
- The absence of the clinical lead during the period January through March 2013. This weakened the local project delivery team, and meant that there was an absence of capacity to push the agenda on the front-lines.

Lessons for successful sustainability

- Embed the longer-term aspiration for sustaining service improvement work in the early strategic conversations to ensure that expectations are set.
- Develop a sustainability strategy with the input of front-line practitioners, clinical supervisors and heads of service.
- Seek to generate as much 'front-line pull' for work being sustained as possible.
- Link the change associated with sustainability strategies with local priorities and service pressures, highlighting opportunities where possible.

- Key in clinical directors at appropriate moments to ensure that heads of service are being held to account for the service improvement agenda.
- Get creative about how clinical supervisors might facilitate the delivery of sustainability strategies, as it is they who are the gatekeepers on the front-lines.
- Link sustainability efforts to wider systemic changes that are required to be in place for the interventions to be successfully mainstreamed.

7. Spread

7.1 Explain your plans for spreading the learning and outputs of this project.

Our priority is to sustain and scale the innovative practice that M(ums)-Power has developed. We understand the challenge of spreading learning in this context. There is a one view of how change happens – the 'brute rationality' view – in which spreading learning is sufficient to sustain and scale its practice. Our view of our own experience and of the literature on innovation suggests that this is rarely sufficient. In short, to scale their work, innovators have to win hearts as well as minds. In fact, they have to win hearts *and* stomachs as well as minds – to both inspire people's passion and speak to their self-interest as well convincing them intellectually. Our plans for sharing sustaining and scaling the work of M(ums)-Power run across these three areas.

The first thing we have focused on is continually sharpening and refining the vision and the case for change of the M(ums)-Power project. We have worked with stakeholders across and beyond the project to build a narrative – backed by simple collateral like posters and presentations – that tells the story of M(ums)-Power; where it comes from, why its needed and what its trying to achieve. We are now starting to tell this story more widely, more broadly across the two institutions we have been working with and across the networks of providers in North-Central and North-East London. In the future we will be engaging the CCGs in North-Central London around this same case for change.

The second thing we have focused on is convincing people that our innovations are successful, and that they can feasibly be implemented elsewhere. Here our run charts and perceptual data provide an evolving evidence base about popularity and effectiveness. At the same time, simple products such as '10 Tips for running group consultations in antenatal services' help people to understand what the work looks like in practice and to support implementation elsewhere.

Lastly, we have been focusing on how we can speak to people's self-interest – how we can build alliances with a range of organisations and use M(ums)-Power to advance their work:

- UCLH Charity about the work can further their charitable mission
- UCL Partners about how scaling the work across their territory might help to model the kind of value they can add
- CCGs about how top-slicing the budget for maternity – including to pay for some elements of M(ums)-Power – can best help them to raise standards and improve service quality.

7.2 How are you promoting your innovation and convincing others of its value?

As we describe very briefly above, we are talking to a range of organisations to promote the work of M(ums)-Power, with the aim of sustaining and scaling its practice. It may be helpful to say a bit more about this work, and to put it in its strategic context.

Our view is that there are three possible routes to scale for M(ums)-Power:

1. Embed and diffuse through UCLH and Barts Health
2. Work with other partners to implement M(ums)-Power in new places
3. Create a new entity to support existing M(ums)-Power work and to take the work together by selling it as a service.

We believe that each of these models may be possible, but are conscious that they are in order of ascending difficulty and risk. As a result, we are not certain enough to choose between them and are pursuing a strategy that seeks to test out all three. However, we are initiating these tests in sequence – we have started with the first, because it is most essential to our project and least risky. We are beginning to explore the second (and the conversations described above are examples of this). In the future, drawing on what we learn about the implementation of M(ums)-Power and demand for M(ums)-Power, we may test out the third of these, possibly in partnership with other organisations.

7.3 What advice would you give to someone attempting to replicate your work in another organisation / setting?

Be realistic about the scope of your project. Taking on too wide a breadth of interventions can result in your team spreading themselves to thin and not having the necessary impact. Even small changes will require substantial effort to implement and sustain, especially when they change staff's working practices and require administrative changes. It is also important to be explicit about the type of change you expect your project to result in. An innovation project which looks to radically change a service will need a very different approach and investment of time than a traditional service improvement project and to sustain staff engagement you need to be transparent about the extent to which their working practices are likely to change.

Drawing on the insights of users and clinicians to understand their experience of services and using these insights to design interventions can help to build credibility. Listening to and capturing the stories of users and clinicians will help you to build a rich case for change that you can come back to throughout the project. Ensure that you involve service-users, front-line staff and service-managers in co-designing your interventions not just at the beginning of your project but throughout the project life-cycle to improve the interventions when testing begins.

Don't underestimate how much effort will be needed to garner the enthusiasm of staff at different levels and maintain this enthusiasm. Invest time at the start of the project to understand the different motivations of service managers and front-line staff and build a comprehensive engagement and communications strategy that will fit with their day to day routines. Throughout the project ensure that there are structured opportunities for clinical staff to feedback on the interventions and ensure that you incorporate this.

One clinical lead per site will often not be enough to build the level of engagement needed to embed your work. Recruiting a clinical lead who is based in the service you are making changes within is important as they are likely to have more influence than an outsider. Consider having more than one clinical lead per site or recruiting clinical champions, people who are also partly paid by the project but are not leading the work. This could help build the seeds of an idea through a small community of practice and ensure that the project does not rely solely on the work of one person.

It is difficult to change relationships if you only focus on one side of the relationship. Any project looking at transforming relationships needs to carefully consider workforce culture and start addressing any unhelpful cultural norms early in the project. It is important to support workforce development by training frontline practitioners with the relevant and necessary skills for example facilitation skills for group appointments or IT skills for managing and updating digital platforms.

Establish and communicate clear guidelines for new ways of working for example by developing step by step operational guides for how to deliver group appointments. These guidelines and tools not only help to implement the intervention in a consistent way they are also useful for diffusing the interventions to other sites.

Be realistic and pragmatic about what you measure. What you measure needs to map onto the motivations and agendas of different stakeholders including managers if your interventions are to be scaled up and sustained.

7.4 What do you see as the main challenges to the future diffusion of your work?

There are three main challenges tot eh future diffusion of this work:

1. Part of what we think makes M(ums)-Power special is that it links an innovation within the current NHS antenatal pathway (group consultations) with the use of online tools that have a life outside of the NHS. The MumsTalk element in particular is not delivered by the NHS, doesn't happen inside NHS buildings and provides novel functionality, which clinicians can safely manage but not completely control. This is a cultural challenge to the NHS, so that holding these two elements together will be difficult. Antenatal services may be keen to adopt group consultations – because they improve services and save money – while ignoring MumsTalk. At the same time, app developers may become excited by the potential to use MumsTalk for new apps for mobile phones, simply as a bolt-on to the conventional NHS pathway. This would be a missed opportunity, and is a challenge we have to overcome.

2. There is a similar kind of 'two cultures' challenge around the pace and strategy needed by a tech start-up and that of a health service change programme. The potential for growth and requirements for hosting, etc. push us to try to scale MumsTalk quickly. However, the need to achieve deep change with staff and patients to make a success of group consultations demand that we work slowly. This is a challenge in terms of judging the pace at which we grow the work, which has knock on effects for how we make the most of the limited time and money we have to invest in this.

3. These challenges are complicated still further by the turbulence being experienced in the NHS in general, and by the specific challenges facing maternity services, which are short of staff and money.

8. Conclusions

Our vision is about making antenatal services more positive, empowering, prospective and connected. In relation to the aims of Closing the Gap through Changing Relationships, of the three, M(ums)-Power has primarily focused on the relationships between individuals and health providers. We have sought to make these interactions more equal and conversational, more informative and more accessible.

We believe that we have met these aims well. We believe that we have built a model of a different kind of antenatal pathway that is emblematic of the aims and values of the Closing the Gap through Changing Relationships programme. We believe that we also have positive data about the effectiveness and person-centredness of this work, although of course we would always like to have more data across more people and longer time periods.

However, in seeking to meet the aims of the programme, we have both encountered some challenges and learnt some important lessons.

Foremost among the challenges we have faced is that of reaching a nuanced position around the role of technology in achieving the aims of Closing the Gap through Changing Relationships. At first, we emphasised the role of technology very strongly. While technical and political challenges within our consortium meant this had to shift, we were also challenged on this by the Health Foundation, which is understandable. However, we then adopted a position that – if anything – under-emphasised the significance of technology to closing the gap. Only later did we strike the right balance between service developments and technological developments – a project that is technology-enabled but not technology-led. We have learnt a great deal from that about how to prioritise and sequence technical and cultural change.

We also encountered challenges in relation not just to what we wanted to achieve but how we wanted to achieve it. Through the work, both within our consortium and between the consortium and the Health Foundation there have been differences of view about the right capabilities and methods to deploy to achieve change. There have been some differences between what we might very loosely describe as innovation and quality improvement approaches. These have created tensions and inconsistencies around issues like how radical the work should be, how speculative it should be, how to sequence or segment different change projects and whether the disruption of the status quo is a positive or negative in achieving lasting change. Our reflection on this is less about one approach being better than another, but the importance of surfacing these issues early and resolving these tensions in principle, to create agreement across project aims, strategies and partners.

Through these challenges, the project has been a privilege to be part of and an incredible learning process for all of us. Of all that we could say about this, perhaps the one further thing to play back is about the aims of Closing the Gap itself. In seeking to

close the gap between patients and services, and engaging women and clinicians around this process, we increasingly came to feel that the gap of greatest significance is the gap between users of public services themselves. While these people benefit hugely from encounters with clinicians, even at their best, these are transitory and fleeting. However – particularly in a service like maternity – what public services can do is to create the conditions in which people meet friends for life. There is an opportunity for service users to establish long-term, equal, supportive relationships with one another that can make a significant difference not only to the outcomes they get from the service but to their lives. This relational story about the role antenatal services can play was profound for us, and may be of interest for the wider programme.