SUSQI PROJECT REPORT

Improving perinatal pelvic health outcomes by increasing uptake of antenatal perineal massage

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Background:

Vaginal birth can contribute to pelvic health dysfunction and cause perineal trauma. During the perinatal period, 1 in 3 women experience urinary incontinence, 1 in 7 experience anal incontinence, and 1 in 12 report symptoms of pelvic organ prolapse. For primiparous women, up to 90% will experience perineal trauma during vaginal birth, 1 in 7 will experience an episiotomy, and 6% will experience an obstetric anal sphincter injury (OASI). Overall, 3% of vaginal births result in OASI, with rates at South Warwickshire University Foundation Trust (SWUFT) averaging 3% (range 2.1–5.4% in 2023–24). OASI are consistently linked to pelvic health dysfunction in the short and long-term following injury. An increase in anal incontinence, urinary incontinence, perineal pain and dyspareunia leading to women needing to alter their lifestyle and negatively affecting quality of life, mental wellbeing (Evans et. al., 2019) and relationships.

For those women who experience OASI, and pelvic health dysfunction there are considerable costs to themselves, to healthcare systems, for the environment and for society. A minimum of 3 months supervised pelvic floor exercise training by a pelvic health physiotherapist is recommended as the initial management for pelvic floor dysfunction. Those living with urinary and anal incontinence often need to make lifestyle changes which may not be environmentally sustainable such as private transport rather than public, an increased need to launder clothes at potentially higher temperatures, and use of incontinence products. Incontinence can negatively affect general health

such as a reduction in exercise and physical activity and contribute to poor mental health such as depression. This can increase the need for other healthcare services and specialties.

There are various techniques that women and pregnant people, and healthcare providers can use to minimise the risk of perineal trauma and pelvic dysfunction during birth. Recently there have been several large bodies of work nationally which have highlighted pelvic health, helping to prioritise it within maternity services. The RCOG and RCM's OASI care bundle, consisting of antenatal (AN) conversations, hands on using the Finnish grip, selective episiotomy at 60-degree angle and post-birth rectal exam, reduced OASI rates in participating sites (RCOG, 2017). The NHS (2019) long plan for maternity stated "we will improve access to postnatal physiotherapy to support women who need it to recover from birth" and was built upon by the NHS (2023) 3 year delivery plan for maternity and neonatal services. The OASI2 care bundle introduced further perineal protection measures such as antenatal perineal massage and warm compress (RCOG, 2021). This care bundle was recommended for national implementation by the Birth Trauma report (All-Party Parliamentary Group, 2024) and NHS England (2023).

Antenatal perineal massage, included in the OASI2 Care Bundle, has been shown to be beneficial in systematic reviews by Cochrane (2013) and Abdelhakim et al (2020). Antenatal perineal massage is a low cost, low risk, readily available sustainable intervention. Women and pregnant people are able to undertake this intervention themselves, with plant-based oils often found in the home, requiring no other resources. Uptake of perineal massage can reduce risk of obstetric anal sphincter injuries, episiotomy and perineal tears. Tears that are experienced have improved wound healing and less perineal pain is experienced. The second stage of labour can be shortened with antenatal perineal massage which may explain a reduction in postnatal anal incontinence.

Increasing the uptake of antenatal perineal massage will help to reduce perineal trauma and pelvic health dysfunction. This will improve maternity outcomes for women, will lead to a reduced need for healthcare and a reduced carbon footprint. There would be a reduced need for perineal repair, which uses single use resources, sometimes needing carbon intensive environments and resources such as obstetric theatres, medications such as antibiotics which are currently not a sustainable medicinal treatment, anaesthetic gases such as Entonox, and staff resources. The carbon footprint of suturing a perineal tear is 3.07 kgCO2e in hospital and 1.7 kgCO2e at a home birth (Spil et. al., 2024). A reduction in trauma, and severe trauma, would result in a reduction of follow up appointments, onward referrals and use of other services and specialities. Healthcare appointments require travel for both the users and those delivering services, with most perineal and pelvic health appointments being face to face. Services use single use resources and can be carbon heavy environments in relation to heating, lighting, machines and IT resources. Coordination of services relies on IT systems, multiple text and email alerts, email and mail correspondence, all of which rely on electricity and large global servers. A reduction in trauma would also reduce required treatments, such as further surgeries.

Those living with incontinence are often reliant on single use products such as incontinence pads, anal plugs and vaginal pessaries. The manufacturing and distribution of these products result in carbon emissions, and the disposal of incontinence products is complicated by non-biodegradable

parts. A reduction in perineal trauma would lead to a reduction in incontinence and the need for these products.

The uptake of antenatal perineal massage amongst maternity users is considered to be low. Although evidence for its benefits are consistently found across studies, rates of uptake and reasons for low uptake are not fully understood. Several barriers could exist for women and pregnant people, such as poor knowledge of benefits or technique, time required to undertake massage, difficulty in performing massage, unwillingness to perform massage, discomfort when performing massage.

The maternity team at South Warwickshire University Foundation Trust (SWUFT) have introduced several measures to reduce OASI rates locally. However, local audit found that antenatal discussions were not routinely documented. This is an opportunity to discuss and advocate antenatal perineal massage. This project looked to increase the number of antenatal discussions around perineal trauma, perineal protection and specifically, antenatal perineal massage. This project was part of the newly launched perinatal pelvic health service project. The project team includes Posy Bidwell, project lead and Deputy Head of Midwifery at SWUFT, Jennifer Prescot, perineal specialist midwife at SWUFT, and Kathrin Gray, pelvic health midwife at SWUFT. All are passionate about improving pelvic health outcomes for maternity users and Bidwell and Prescot have had experience in implementing the OASI Care Bundle.

Specific Aims/Objectives:

To reduce pelvic health morbidities by increasing the uptake of antenatal perineal massage, by

1. Increasing community midwives' knowledge and confidence to initiate effective antenatal perineal massage conversations
2. Increase women and birthing people's confidence to initiate antenatal perineal massage
3. Increase access and accessibility of antenatal perineal massage resources for women and birthing people

Methods:

Identifying Stakeholders

Our premise was that for women to have the knowledge, skills and confidence to undertake antenatal perineal massage they would benefit from healthcare professionals either providing or signposting them to it during pregnancy. This helped identify stakeholders for the project. We wanted to hear from service users, maternity staff, community midwives in particular, and trust antenatal education providers.

Study the System

Before designing an intervention, we attempted to understand current practice and knowledge around antenatal perineal massage.

We designed a service user survey and a community midwife survey, looking to understand knowledge of antenatal perineal massage, barriers to discussing and undertaking antenatal perineal

massage, how many reported having discussions around antenatal perineal massage and how many women undertook antenatal perineal massage. The service user survey was shared on local social media pages and staff survey was shared via email. We were also able to add in 2 questions into another pelvic health service user survey which was being undertaken. We shared the service user survey with the lived experience group supporting the Green Maternity Challenge who supported in writing the service user survey.

We contacted the community midwifery teams to understand the face-to-face antenatal education provided. We gained access to the virtual antenatal education available to all maternity service users at SWUFT to view content and contacted the company to understand whether revisions to content could be made locally.

We undertook an audit of perineal protection techniques utilised at SWUFT, for those who experienced OASI and those who did not. We looked at antenatal conversations, hands-on, warm compress, episiotomy, PR examination and birth position. We conducted an audit of perineal wound attendances into our triage department. We made data requests from our electronic patient records team and antenatal education providers to understand how often women accessed information on antenatal perineal massage. We completed a process map looking at perineal protection care points during pregnancy and birth, and repair and follow up of perineal trauma and OASI. We looked at current guidance to understand the recommended care for perineal protection, repair and follow up care. We used NHS tariff to cost OASI repair, triage attendance and follow up visits with physiotherapy and Consultant outpatients.

Designing improvement

Our intervention developed into a training package for community midwives, with online resources they could signpost women to. The project team made a short video to share with midwives which included a mock conversation between a midwife and pregnant woman around perineal trauma and massage, a video on a model to demonstrate perineal massage and a mock discussion to follow up and address any difficulties the woman experienced when undertaking massage. This was embedded into a PowerPoint presentation to include evidence for perineal massage and troubleshooting.

Our community midwifery consists of several teams. Due to several factors outlined in our discussion, training was offered to midwives who volunteered to attend. Staff were provided with additional pay to compensate for their time in attending training, a 30-minute face to face presentation with an opportunity for discussion and asking questions. There were two identical sessions, 1 week apart, to enable as many staff to have the training as wanted. Attending staff were then offered support in a WhatsApp group for any questions they had or were faced with when having conversations.

Prior to the project, women could be signposted to local resources, such as the patient electronic records app, an online perineal massage video, and an online antenatal birth preparation course. The resources were limited, were separate to each other, and weren't available in different languages.

We built an antenatal perineal massage page on our local online antenatal birth preparation course and were able to monitor the number of women who accessed that page. We were able to design a bespoke page for SWUFT with the Real Birth Company, giving a brief overview of perineal massage, and its benefits. We then added links to the existing perineal massage video at SWUFT, RCOG tears hub and POGP mylondon perineal massage videos.

Following staff training and preparation of the resources, we asked midwives to discuss perineal trauma and antenatal perineal massage with all women they met who were over 30 weeks. At the end of the conversation women were directed to local antenatal birth preparation resources provided by the Real Birth Company developed as part of the project. Women were also given a QR code to a Microsoft Form to evaluate the conversation and understand whether this increased their knowledge of antenatal perineal massage and increased their confidence to undertake (See Appendix).

We asked all staff who took part in the intervention part of the study to complete a post intervention survey and take part in a post intervention focus group, again, to evaluate whether the training increased their knowledge and confidence around perineal massage and whether it removed any of the barriers they were facing to discussing it with women.

Measurement:

Patient outcomes

We have used outcomes from our staff and patient survey to qualitatively measure improvement in our education and training to women as an indirect measure of care being more patient-centred, timely and effective in line with national guidance.

While we can't measure uptake of perineal massage directly, we asked women if they intended to use perineal massage following their conversation with their midwife in the patient survey, as an indirect measure of increased uptake.

We audited OASI and perineal wound triage attendances at the beginning of the project. This included the number OASI repairs, and referrals to physiotherapy and gynaecology outpatients due to OASI. We completed a process map looking at perineal protection care points during pregnancy and birth, and repair and follow up of perineal trauma and OASI. We looked at current guidance to understand the recommended care for perineal protection, repair and follow up care. We used NHS tariff to cost OASI repair, triage attendance and follow up visits with physiotherapy and Consultant outpatients.

As we require more time to collect data following our intervention, we have modelled potential impacts based on the existing literature. Abdelhakim et al (2020) found "Women who received antenatal perineal massage had significantly lower incidence of episiotomies (RR = 0.79, 95% CI [0.72, 0.87], p< 0.001) and perineal tears (RR = 0.79, 95% CI [0.67, 0.94], p= 0.007), particularly the risk of third- and fourth-degree perineal tears (RR = 0.36, 95% CI [0.14, 0.89], p = 0.03). Better wound healing and less perineal pain were evident in the antenatal perineal massage group. Antenatal perineal massage reduced the second stage of labour duration (p=0.005) and anal incontinence (p=

0.003) with significant improvement in Apgar scores at 1 and 5 min (p= 0.01 and p= 0.02)." We have therefore modelled a potential reduction in risk from 4% from 2.56%.

Environmental sustainability:
To estimate the environmental impact of perineal massage, the carbon footprint of the units of healthcare activity saved were carbon footprinted, including visits to the maternity assessment units, physiotherapy appointments, appointments with a consultant of gynaecology, inpatient bed days and patient travel to the outpatient appointments and inpatient stays.

To calculate the carbon footprint, the emissions factor for an A&E (Sustainable Healthcare Coalition (SHC) 2015) was applied to the visits to the maternity assessment unit, for the physiotherapy appointment and the consultant appointment the emissions factor for an inpatient bed day (SHC 2015) divided by 24 was applied and the average distance for a patient travel return journey was taken from the HOTT tool and the mode of travel mix taken from the Centre for Sustainable Healthcare's carbon calculator for (avoided) travel emissions which is based on the National Travel Survey and the Department of Energy Security and Net Zero's carbon conversion factors for company reporting.

It was assumed that 50% of pregnant women who are educated in perineal massage will implement it and for those it was assumed that their risk of 3rd and 4th degree of tears reduces from 4% to 2.56% as reported in Abdelhakim et al (2020).

Economic sustainability:
There were some investment costs for staff training as staff were paid for their attendance. We paid 8 members of staff for one hours to attend training and be part of the project.

If this training was to be delivered to all maternity staff, each time it was delivered it would cost £2,178.94 was allocated to provide training to 173 midwives (at a cost of band 6 pay £25.19/hour) and £931.51 to train Obstetric Staff (8 Trainee, 12 middle grades, 14 Consultants). This is a total training cost of £3,110.45.

If we were to buy resources as requested in feedback it could cost for 5 models to help demonstrate perineal massage = £145.20 per model.

Cost of license with the Real Birth Company = unknown on-going contract

Costs for OASI repair, physiotherapy appointments, gynaecology outpatient appointments and maternity triage attendances, were obtained via NHS tariff. We were unable to find local data from trust finance or procurement. We used the following costs:

OASI Repair	£3857
Physiotherapy Follow Up Care per appointment	£213
Gynaecology Follow Up Care per appointment	£230
Maternity Triage Attendances	£134

We undertook a pathway mapping exercise to estimate the average care and associated resource use to estimate financial savings and combined this with the findings of Abdelhakim et al (2020) described above to predict financial savings (see results section).

Social sustainability:
We collected information from community midwives and service users. Prior to the intervention we asked community midwives to complete a survey to understand current knowledge and practice around perineal massage. Following the training and intervention we repeated the survey to understand whether knowledge, confidence and practice had changed. We also spoke to staff who had received the training to understand their experience of the project and of having conversations with women.

We implemented similar surveys before and after with women to explore the impacts of perineal trauma and whether knowledge, confidence and uptake of perineal massage will increase.

Results:

Patient outcomes:
There are around 3,300 bookings at Warwick hospital with approximately 78% of service users (2,574) planning a vaginal birth, who ideally would have accessed information on antenatal perineal massage.

The project supported women to access care that is more patient-centred, timely and effective in line with national guidance.

Timeliness of care: Pre-training 12/18 (67%) midwives routinely discussed antenatal perineal massage at 36 weeks (31%), 34 weeks (17%) and between 30-34 weeks (17%). 9/18 midwives gave multiple answers, which may reflect having multiple conversations, or being flexible in the timing of their conversations. Post training, 100% (4/4) midwives had conversations from 16 weeks, but really focussing once reaching 30/32 weeks. This better aligns with evidence base, with Abdelhakim et al (2021) finding 4-6 weeks of perineal massage resulted in benefits.

Knowledge and confidence in risks and benefits in staff:
Most midwives correctly identified key OASI risk factors, such as instrumental birth and high birthweight, but fewer recognized Southeast Asian ethnicity (11/18) and primiparity (9/18). Some misconceptions persisted, including Black Caribbean ethnicity (10/18) and waterbirth (8/18). Confidence in discussing risk factors was mixed, with only 7/18 feeling confident. Post-intervention, most midwives (3/4) discussed individual risk factors, with improved confidence.

Midwives were aware of perineal massage benefits, including reduced OASI (18/18), perineal trauma (16/18), and episiotomy (12/18). However, misconceptions remained about instrumental birth (10/18) labia trauma and prolapse. Confidence in discussing benefits was mixed (6 confident, 8 neutral, 4 not confident), though post-intervention, discussions covered key benefits like perineal trauma reduction and wound healing.

Confidence in teaching/modelling perineal massage technique:
Confidence in teaching perineal massage was low (4 confident, 8 neutral, 6 not confident). Post training, all midwives reported increased knowledge, 2/4 felt extremely confident however 1 did not feel their confidence had increased.

Access to resources:
Our pre intervention survey suggested up to 44% of women were given information, and pre intervention audit showed 448 accessed AN education or BadgerNet resources.

At the beginning of the project, service users could access a perineal massage video, and an RCOG perineal tears leaflet via their electronic patient notes APP. The trust perineal massage video was accessed 106 times (207 the preceding year). The RCOG perineal tears leaflet was accessed 54 times (compared to 63 the preceding year). Service users are directed to the Real Birth Company for birth preparation and/or face to face sessions led by the community midwives. Face to face birth preparation is provided by each community midwifery team, 6 in total. 3 teams confirmed they covered antenatal perineal massage in their course. Each team runs a course each month. There should have been 36 courses in 2024 which covered antenatal perineal massage - reaching up to 216 to 288 women. 528 women accessed and completed the mandatory module as part of the Real Birth Company online birth preparation course. This course didn't include perineal massage information.

The Real Birth Company were able to provide access rates for this page. In a 4-5 week period, 19 service users accessed the antenatal perineal page we created. This would project as 198 annual visits - an increase from current BadgerNet resource access. The Real Birth company were able to provide some demographic data for those accessing the perineal massage page. All accesses were in the English language, 65% were British European, 15% were East European, 5% were Indian and 5% were Middle Eastern ethnicity. Local public health data for Coventry and Warwickshire show 10% of the population are Asian, 86% are White British or European, and 1% are other ethnic groups.

Personalised care:
Pre-project, only 1/9 received information face-to-face, while most relied on social media, private classes, or search engines. Post-project, women wanted midwives to provide guidance with links to resources in their electronic records. Our survey and focus group found midwives also favour face-to-face discussions with signposted resources

Our focus group with 2 midwives showed they supported earlier and repeated discussions responsively to the women's needs. They felt that community midwives were in a privileged position as continuity of carer, when it occurred, enabled their messages to be received positively. Our focus group reported that women were receptive to the conversation around antenatal perineal massage, being engaged and asking questions. A midwife gave an example of being able to discuss it when a woman brought up her concern of perineal tearing at the booking appointment, to help alleviate some of their concerns.

Confidence of women

Pre-project, 5/9 women given information felt it was either very clear or somewhat clear regarding the importance of antenatal perineal massage however no one felt confident to undertake, or be sure they were undertaking it correctly. Lack of knowledge and confidence were the main reasons women did not undertake perineal massage in our pre intervention survey (additional barriers discussed in social impact section). Post-intervention, women reported increased knowledge and confidence, valuing midwife support and resource signposting.

One of the pre-project surveys was a larger pelvic health survey in which we included a question "Did you undertake antenatal perineal massage during your most recent pregnancy". 68% (120/176) responded No (18% yes, and 14% N/A). Women were asked whether they intended to perform antenatal perineal massage in the post conversation survey. Only 1 woman responded to this who was intending to undertake it.

Improved outcomes

With improved accessed to information and support, we predict that uptake of perineal massage will increase which can improve health outcomes in arrange of ways by reducing the risk of OASI, perineal trauma, and episiotomy, leading to lower rates of pelvic health dysfunction such as incontinence and pain. This could then lead to a need for other healthcare services and specialities. This can enhance physical and mental wellbeing.

We used our electronic patient records system (BadgerNet) to monitor any changes in patient outcomes pre and post project intervention.

	Pre Project (September 2024)	Post Intervention (January 2025)
Number of OASI	4	5
Number of physiotherapy referrals for OASI	4	5
Number of gynaecology referrals for OASI	4	5
Episiotomy	29	26
Perineal Trauma	109	118
Perineal Wound Concerns Seen in Triage	15	5

The initial month of data collection has not shown a difference in OASI numbers, however we anticipate this may not reflect the birthing outcomes of women who have been involved in the change, who will give birth in February-March. We will continue to monitor the rates of OASI. We will continue to collect data on other outcomes such as episiotomy to evaluate if there is a reduction, however this has not been considered in out projected outcomes at present.

Environmental sustainability:
With the assumption that 50% of women who are educated in perineal massage would carry it out and using the findings of Abdelhakim et al (2020), we have predicted the potential reduction and impact.

	Current local annual rates	Estimated reductions
OASI (BadgerNet data)	76 (4.1% of vaginal birth)	4.1*0.36 = 1.476% 76*0.5*0.36 = 13.68
Episiotomy (BadgerNet data)	330 (18% of vaginal birth)	18*0.79 = 14.22% 330*0.79 = 260
Perineal tears (BadgerNet data)	817 (44% of vaginal birth)	44*0.79 = 34.76% 817*0.79 = 645
Triage attendances for wound healing (Audit)	84	

Perineal pain, average second stage of labour, anal incontinence, average APGAR scores - data not obtained.
The table below shows the number of visits to the maternity assessment unit, physiotherapy appointments, outpatient appointments with gynaecology and inpatient bed days and the carbon footprints of the units of healthcare activity before and after the risk reduction through perineal massage.

3rd and 4th degrees perineal tears	**Number per year - baseline**	**Carbon footprint - baseline (kgCO2e)**	**Number after reducing risk of severe tears**	**Carbon footprint - after (kgCO2e)**
Number of women	76		62.32	
Maternity assessment unit visits	84	1,159.20	68.88	950.54
Physiotherapy appointments	228	360.05	186.96	295.24
Outpatient appointments with gynaecology	76	120.02	62.32	98.41
Inpatient days	76	2,880.40	62.32	2,361.93
Patient travel (return journey of 25.14 miles)	386	5,963.70	316.52	4,890.23
Total		**10,483.37**		**8,596.36**
Savings (kgCO2e)				**1,887.01**

Perineal massage would lead to a reduction in the total carbon footprint from 10,483 kgCO2e to 8,569 kgCO2e, an annual greenhouse gas emissions savings of 1,887 kgCO2e.

Economic sustainability:
Pathway mapping showed the average costs for each OASI is £4,736.50. With the assumption that 50% of women who are educated in perineal massage would carry it out and using the findings of Abdelhakim et al (2020), an annual financial saving of £64,795 could be achieved.

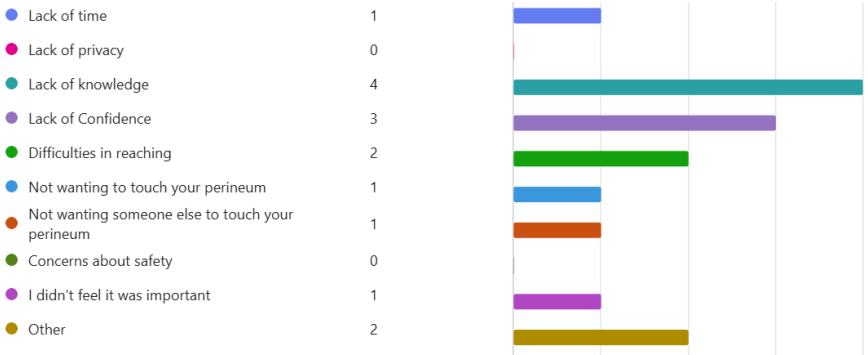
Social sustainability:
Staff
This project relies on maternity staff time, both for training and to have conversations. Providing a 30 minute training session for 173 midwives would equate to 86.5 hours of staff time, more if training was to be recurring. To enable maternity services to have these conversations with women, it may require them to prioritise them at the cost of other conversations e.g. discussing antenatal vaccinations, resulting in unforeseen negative outcomes. Lack of time (due to clinical pressures, competing priorities) and lack of resources (to demonstrate, to signpost to, translations) were the main barriers highlighted by staff who undertook our survey.

Our focus group felt that the real barrier of time and competing priorities was not removed by the project, but their knowledge and confidence barriers were. They did find that having somewhere to easily signpost women too did help with some of the time as they didn't have the responsibility to explain everything.

Our post intervention survey found that all midwives (4/4) found that receiving training has changed their practice regarding antenatal perineal massage, finding that they discuss it more often, it brought it to the front of their mind, increased their awareness and increase their confidence.

Women
Undertaking perineal massage involves service users planning a vaginal birth to spend between 70 - 210 minutes undertaking antenatal perineal massage over several weeks prior to delivery. This may not feel realistic to some women who are juggling many responsibilities during their pregnancy.

While time may be a barrier, it was not commented on largely in our pre-intervention survey. Lack of confidence and knowledge were the main barriers, with this possibility influencing other responses such as not feeling it was important. Some other barriers such as difficulties in reaching and pain, may have been resolved with follow up 'trouble-shooting' conversations with their midwife, or easy access to further resources.



Our focus group felt that apprehension, the intimacy of the massage, social stigma around touching your vagina and perineum, as well as lack of knowledge were barriers which they found in their conversations. The resources to signpost women to were felt to be positive in the focus group, as they normalised antenatal perineal massage, being able to hear about it from various professionals, and not just their midwives or friends, but from national professional groups made women realise the importance of it. Increasing the knowledge of maternity services and service users would help to increase the collective knowledge within society, which may help to normalise and increase update of antenatal perineal massage longer term.

Those living with urinary and anal incontinence often need to make lifestyle changes such as private transport rather than public, an increased need to launder clothes at potentially higher temperatures and use of incontinence products. It may lead to avoidance of activities women usually enjoy (e.g. a reduction in exercise and physical activity) with negative impacts on quality of life. Prevention of perineal trauma can therefore bring multiple long-lasting benefits to women.

Discussion:

We faced several expected and unexpected barriers. Our initial aim was to improve antenatal perineal massage uptake to reduce local OASI rates. Within the timeframe of the project, we knew we couldn't follow a cohort of women through, from having a conversation, undertaking perineal massage, giving birth and their birth outcomes. We decided on an intervention and measurements which would give us an understanding of women's intentions to perform antenatal perineal massage, using that intention as our measure of uptake.

This resulted in several steps from our original outcome of OASI and associated pelvic health dysfunction. We aimed to train staff, which would enable them to effectively discuss antenatal perineal massage with women, resulting in women understanding the importance, benefits and technique, and then effectively undertaking this intervention. Having multiple steps made it harder to measure outcomes and accurately link them to our training intervention.

Our projected annual carbon and financial impact is based on an assumption that 50% women planning vaginal birth will undertake perineal massage. Especially in the short term, this is likely an unrealistic assumption. Pre project, we found 18% of survey responders did undertake antenatal perineal massage. In our focus group, midwives felt they had spoken to up to 45 women, which resulted in 19 (42%) accessing the resources they were signposted to. However, we cannot expect all 19 to move from reading to effectively undertaking for enough time. Our pre project survey and post project focus group had a similar theme that women who did undertake antenatal perineal massage weren't always confident they were doing it correctly.

Buy in from staff and service users was low. We expected this, but not to the degree we experienced. We had put a question into a larger survey, in case of poor response to our project survey. Initially we didn't receive any staff responses but managed to achieve just under 50% of community midwives replying by attending the community midwifery office at the beginning and

end of the day. We also offered a gift to be randomly allocated to a staff member who filled in the form.

We initially wanted two groups of midwives, one to receive the training and one as a control group, to be able to compare post intervention measures. We were unable to get the buy in from staff to be able to train a whole team of midwives at such short notice (less than a month). Instead, we asked for willing midwives and agreed to pay for their time taken for training. We paid 8 staff members, but only 4 completed the post intervention survey (part of the agreement to participate in the project) and only 2 came to the focus group. We didn't expect these responses from staff who had self-selected for the project and had received reimbursement for their time.

We expected poor pre-project engagement from service users, so had put questions into a larger survey that was being undertaken. We only received 9 responses from service users, but they did reflect some of the other measures we'd undertaken such as audit, resource access and staff survey. Our post conversation survey was extremely low, with only 1 service user completing. Initially there had been an error with the survey access (which was found out 10 days into the 6 week study period). To compensate for this, we ran a focus group with the study midwives, asking them the questions from the service user survey for their opinions, and extrapolating this to reflect women's views. This may explain the poor turn out at the focus group, being an unplanned and last minute addition. The 2 midwives reported they spoke to up to 45 women, so our response rate of 1 was very poor.

We wanted to understand any local health inequalities. We didn't include equalities monitoring in our survey for ease of response. We did include equalities monitoring in our OASI audit but didn't obtain baseline booking demographics to compare to during the project timescale. The real birth company were able to provide demographics of access, but the low numbers will mean small frequencies are overrepresented.

The risks of the project would be the time required, without evidence of a change in behaviour. Time is needed for staff training, to have meaningful and effective conversations with women, having multiple conversations as needed, needing to de-prioritise other clinical tasks to fit this in, and the time taken for women to undertake antenatal perineal massage. However, the benefits would reduce staff time within the wider NHS and the pelvic health dysfunction burden for the wider population. The training did result in an increase in knowledge and confidence to discuss and teach antenatal perineal massage, and did remove some of the barriers midwives faced. Having resources helped to remove some of the time pressures as conversations could be briefer.

Response from service users suggested that most wanted this information as a discussion with their midwives, with resources signposted to. Community midwives felt they were in a privileged position as they were able to build a relationship over time with someone, and this trusting relationship gave more weight to the advice they gave women. They also felt the resources linking to national groups e.g. RCOG, helped women realise the importance of this intervention. Hearing about it from multiple people, sources and professions can help normalise this.

Although midwives wanted to give this information, when different options were suggested during the focus group e.g. re-occurring perineal massage classes, videos to demonstrate, they felt these could be good options too.

Training helped to increase midwives awareness of the importance of antenatal perineal massage as an evidence based intervention, meaning they were more likely to prioritise giving this information to women. Our pre project surveys found that most midwives felt they gave this information, but most women didn't feel they had been told about it from a health care professional. This could relate to midwives' knowledge and confidence of risk factors, benefits and techniques being average to low, perhaps suggesting that their conversations weren't effective. Speaking to midwives in the focus group, they felt that they initiated most of the conversations, but that women were very response to the conversations, seemed engaged and asked questions. The midwives found that most women had heard of antenatal perineal massage but didn't initiate the conversation and hadn't found out any resources. They felt that them discussing it, and signposting the national resources, made women realise it was an evidence based recommended health intervention, and increased its importance for them. Conversations were often late in pregnancy, giving little time for women to think and access resources prior to commencing, and little opportunity for repeat conversations to check if women had any questions or concerns.

Training did help midwives to have this conversation earlier, but for multigravida women, their appointments are either 28 weeks or 34 weeks, the midwives feeling 28 was too soon, but 34 potentially not giving enough time to perform prior to birth. Midwives didn't normally discuss risk factors with women, which can help for some women to understand the importance for them as an individual. Midwives are potentially having ad-hoc conversations as able. Midwives reported in both surveys and focus groups that they didn't always feel confident to have the conversation, or to be able to answer any questions asked following it and trouble shooting. With one response 'I find it hard knowing what to say'. This could be related to practice and normalizing these conversations for healthcare professionals.

Midwives' confidence to teach antenatal perineal massage was found to be average to low. For women to have the confidence to undertake, and the knowledge and understanding to undertake effectively, they need midwives to be part of the team to guide them. Perhaps having more than one conversation to help troubleshoot and reassure women, as well as signposting to resources.

Conclusions:

We did not have enough voices from women, to understand their barriers, their attitudes and what intervention would help to increase their uptake of antenatal perineal massage. We didn't hear from them to evaluate whether the conversations and resources were effective in helping them to understand the importance of, and being able to confidently and effectively undertake antenatal perineal massage.

We did find that training improved staff knowledge and confidence to discuss antenatal perineal massage benefits, importance and technique with women. We didn't find that it improved having

discussions about an individual's risk factors. However, we were unable to link this to an intended or actual increase in antenatal perineal massage. This may have been to the short time frame of the project, our lack of engagement with service users, or because there wasn't an effect.

Speaking to midwives, we need to do more to convert them to the importance and benefits of antenatal perineal massage as one of the key interventions in reducing OASI rates and pelvic health dysfunction. Even in our small intervention group, who self-selected for face-to-face training on antenatal perineal massage, we had a high drop out. Universal training may help to normalize antenatal perineal massage and change the culture, but it is unsure whether staff are receptive to training, given their competing priorities. Even after training, conversations were felt to be hard, perhaps suggesting a mixed method training using role play.

We want to disseminate training more widely, and have included it in mandatory training for 2025, although a much shortened version. We would like to be present on departments to have ad-hoc conversations with staff, aiming to change the culture of maternity to believe in the importance of antenatal perineal massage and know the benefits and techniques. We need to normalize it within our professions, to be able to normalize it for service users and help remove any stigma. We need to improve our collective knowledge of antenatal perineal massage benefits and techniques to improve the knowledge of the wider population including our service users. Antenatal perineal massage needs to be a routine part of antenatal care, birth education and conversations between ourselves and perinatal women. We would like to build the library of resources, adding to our Real Birth Company page. As part of our ongoing PPHS project we will continue to audit OASI.

References

Abdelhakim et al (2020) Antenatal Perineal Massage Benefits in Reducing Perineal Trauma and Postpartum Morbidities: Systematic Review and Meta Analysis of RCTs
All-Party Parliamentary Group (2024) Birth Trauma
Cochrane (2013) Antenatal perineal massage for reducing perineal trauma
Evans, E. Falivene, C. Briffa, K. Thompson, A. Henry, A. (2019) What is the total impact of an obstetric anal sphincter injury? An Australian retrospective study. Int Urogynecol J.16;31(3):557–566. doi: 10.1007/s00192-019-04108-3
NHS England (2023) Service specification: Perinatal Pelvic Health Services
NHS (2019) The NHS Long Term Plan
NHS (2023) Three year delivery plan for maternity and neonatal services
RCOG (2017) OASI Care Bundle Implementation Guide for maternity sites in the roll out phase.
RCOG (2021) The OASI Care Bundle manual for midwives and obstetricians. OASI2
Spil N, Nieuwenhuizen K, Rowe R, Thornton J, Murphy E, et al. The carbon footprint of different modes of birth in the UK and the Netherlands: an exploratory study using life cycle assessment. BJOG 2024; 131: 568–78.)

Appendices

Pre Intervention Staff Survey

- What team are you in?
- Do you routinely provide women and birthing people with information on antenatal perineal massage (Please select one) Yes/No/'other'
- If yes,
    - How do you provide this information (Please select all that apply) One to one discussion, discussion at group class, via BadgerNet, leaflet, video, website, app
    - When do you give this information?
- How important do you feel antenatal perineal massage is when preparing for a vaginal birth? Very Important, Somewhat Important, Neutral, Not important Comment:
- How would you like to provide information, advice and support on antenatal perineal massage? (Please select all that apply) One to one discussion with midwife or other health care professional, discussion at group class, via BadgerNet, leaflet, video, website, app
- When do you think would be best to provide this information?
- When discussing antenatal perineal massage, which of the following benefits do you inform women and birthing people of? (Please select all that apply) Prevention of obstetric anal sphincter injury, prevention of episiotomy, reduction in perineal trauma, shorter pushing stage of labour, improved perineal wound healing, less wound pain, less chance of anal incontinence after birth
- Do you discuss a woman or birthing persons individual perineal trauma risk factors with them? Yes/No
    - list risk factors (you could put some non risk factors in too)
- How confident are you to have conversation with women about their risk factors?
- How confident are you to teach service users to perform antenatal perineal massage? (Please select one) Extremely confident, somewhat confident, neither confident or unconfident, somewhat unconfident, extremely confident
- What barriers do you face when discussing perineal trauma and antenatal perineal massage with women and birthing people (Select all that apply) Limited time, Competing clinical priorities during direct patient care, Lack of specialist knowledge, Lack of confidence, Lack of available resources to signpost service users to, Lack of prompts to remind you, Lack of regular training sessions, Poor accessibility of available patient facing resources (e.g. accessing correct platforms, ease of printing), Lack of resources available in a variety of translation options, Lack of fit for purpose translation services during direct patient care, lack of time/clinical pressures?
- In your opinion, what could improve the information, advice and support you and the service? provide in relation to antenatal perineal massage?

Post Intervention Service User Survey

- Were you aware of antenatal perineal massage prior to speaking with your midwife today? Yes/No
- Had you found information of perineal massage prior to speaking with your midwife today? Yes/No

- If yes, where did you access this information: One to one discussion with midwife or other health care professional, discussion at group class, via BadgerNet, leaflet, video, website, app, Non-NHS websites, Google, social media platforms, friends and family)
- How would you like to receive information, advice and support on antenatal perineal massage? (Please select all that apply) One to one discussion with midwife or other health care professional, discussion at group class, via BadgerNet, leaflet, video, website, app
- After speaking with your midwife today, how important do you feel antenatal perineal massage is to you and your birth? (Please select one) Very Important. Important. Neutral. Not important
- After speaking with your midwife today, has your knowledge and understanding of antenatal perineal massage increased? Yes/No
- After speaking with your midwife today, how confident do you feel to undertake antenatal perineal massage? (Please select one) Very Confident/Confident/Somewhat Confident/Not Confident
- Do you intend to perform perineal massage during your pregnancy? (Please select one) Yes/No
- In your opinion, what could have improved the information, advice and support you received in relation to antenatal perineal massage?

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Template References

- SQUIRE | SQUIRE 2.0 Guidelines (squire-statement.org)
- Home | Sustainable Quality Improvement (susqi.org)