



GREEN MATERNITY CHALLENGE

SUSQI PROJECT REPORT Supporting Breastfeeding

Start date of Project: October 2024

Date of Report: 27th January 2025

Team Members:

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Background:

Infant feeding is one of the carbon hotspots of maternity services and the impact can be reduced by increasing rates of breastfeeding, and reducing the amount of formula and related equipment. At Great Western Hospital we support 4,200 births a year. Of those, between 75-84% of birthing people intend to breastfeed and 74-86% initiate breastfeeding in the first 48 hours.

There is an approximate rate of 8% of birthing people who stop breastfeeding by the time they go home from the hospital, which equates to approximately 338 mothers per year. A further 20% stop during the first two weeks at home. Whilst there are several reasons breastfeeding rates decline, we know from patient feedback and complaints that support is a major contributor. Complaints are the highest on postnatal wards, with infant feeding and poor infant feeding support highlighted as one of the key themes on feedback. From discussions with birthing people in the postnatal community support services, maternity users have felt let down by the limited support provided from maternity services.

Reduced access to support contributes to a high readmission rate of 5-20 mothers and babies a month requiring additional bed stay days in our paediatric unit for jaundice, weight loss, tongue tie, relating to poor breastfeeding and lack of infant feeding support. From a carbon perspective this will increase scope 1, 2 and 3 emissions, as it requires patient travel and transport, clinician time, bed days, formula supplementation, equipment, tests (e.g., blood tests) and potentially phototherapy treatment. Not only is this at a great financial cost to the hospital, but can also

negatively affect parents' mental health and their early home life will be greatly disrupted. Supplementation represents an increase in financial cost to parents also.

Breastfeeding improves long term health of both mothers and babies, in the short term, maternal mental health can be affected by feeling as if they have not been able to breastfeed, if that was their intention, which has far reaching effects on bonding, socialising and long term health.

For this project, we wanted to work towards improving the following:

- Maternal mental health and wellbeing
- Social support for women
- Capacity for staff to provide care, reducing time needed to provide care to patients
- Parents being discharged home with feeding issues and poor support leading to higher requirement and request for supplementation when home in the community

We are a collaboration of postnatal ward managers, a chief sustainability clinical fellow (who is also an experienced Midwife), Infant feeding team Midwives and Nurses, sustainability leads, and have access to the wider maternity teams. We also have access to our Maternity and Neonatal Voices Partnership (MNVP) leads for the voice of the service users throughout these changes. Within our team we all have access to both front line and senior members of staff who will be part of the changes happening in practice to move forward the changes.

In addition, research shows that more support, community support and observation of other breastfeeding mothers can increase the chances of breastfeeding continuation, highlighting the benefits of having a shared communal space for breastfeeding support.

Great Western Hospital is a BFI accredited trust, therefore auditing infant feeding and gathering feedback around this is monitored regularly, as well as ensuring that the trust meets the criteria for accreditation.

Specific Aims:

To improve breastfeeding rates at time of discharge and 2 weeks post discharge through implementation of daily feeding support groups on the postnatal ward.

Methods:

Studying the system:

We evaluated our current service provision for breastfeeding support. Antenatally infant feeding is discussed, with the benefits of breastmilk highlighted, and if families chose to attend the antenatal classes they are shown how to breastfeed. Some women and birthing people will be advised to hand express prior to birth, particularly if their baby has a high risk of being admitted to the neonatal unit, however this is not universally taught. Breastfeeding advice and support is given following birth and when requested on the ward, but due to staffing pressure, staff confidence, acuity and other factors, this support is inconsistent and many families find it to be insufficient as evidenced.



A survey sent to women via our Maternity Voice Partnership colleagues included some of the following feedback when asked about the support given regarding infant feeding:

“During hospital, I was only shown 1 feeding position and wasn't taught or shown how to latch properly. I was taught better from the breastmats support group.”

“Rushed help with latch, different advice given, didn't not feel supported or the time was given”

These comments prompted us to want to improve the support women and birthing people were receiving;

As a BFI accredited trust, infant feeding information is regularly tracked and audited, from rates of breastfeeding initiation to parents' experiences. From this information and from the 'family and friends' feedback forms collected on discharge, we identified that families often felt that they did not receive the support they needed with breastfeeding. This contributed to dissatisfaction in the service, negative experiences for families and reduced rates of ongoing breastfeeding.

We also engaged with the local support group, 'Swindon Breastmats' to further understand the issues regarding feeding support at the hospital and to gain understanding on how these groups are run and the benefits families receive.

Designing improvement

We met as a team to discuss how we could tackle this, whilst being mindful about the pressures on staffing. Feedback received from birthing people that attended the local breastfeeding group showed that they liked the community feel of a group support session, connecting with others who have similar problems and reducing the negative stigma attached to having feeding issues.

Therefore, our idea was to implement an infant feeding support group daily on the maternity ward, providing a comfortable setting for birthing people to attend to ask questions, get advice and support, and join others who may be having similar issues. The support group would also signpost to ongoing support and supply information to families.

The following factors needed to be considered:

Timing: The support group initially ran for one hour, five days a week. After the first 8 weeks, we were able to cover 7 days a week with maternity support workers.

Staff skills: To start, we sent out QR codes to get feedback from volunteers, support workers and midwives to ask about their experience of supporting infant feeding on the ward, as we wanted to meaningfully impact their work also. We also asked if they would feel confident facilitating the support groups, or if they would like further training. We discovered from this that some people felt confident to run the support group, others would like some support to gain confidence first from the infant feeding team, whilst some did not feel confident in a group setting. Having enough staff to cover the daily sessions was important, but we wanted to support staff with this change, therefore we set up a voluntary rota for those that were keen, supported heavily at first by the infant feeding team. For the first 8 weeks, those that wanted support had a buddy, and volunteers supported also. Consideration around workload, meal times and other reviews were taken into account when deciding on the time, we felt that the morning worked best.



Specialist support: On top of the hour support group, three times a week there would be an additional one hour of support by one of the infant feeding team for specialist support, making individual plans and tongue tie assessment if required.

Location: We wanted our service users to have a consistent and accessible place to go for feeding support and to meet others on the ward, with information displayed and refreshments to make it feel more relaxed. We had sofas and supplies available already in the Woodland Suite, as this had been being used as a shared space for staff and patients. This was not an ideal situation for either staff, or patients, and with a change happening on the ward to implement transitional care, it was a good time to look at the spaces available and include the estates team to repurpose a room exclusively for staff, to improve their breaks and wellbeing. This meant that the Woodland Suite would be solely for patients

Promotion of and engagement with the groups: The ward has a tannoy system, which would be used to announce that the daily support group is about to take place, along with posters in the ward, with staff also being encouraged to ask families to attend. The group would be open to both antenatal and postnatal women to attend. Antenatal expressing helps to reduce formula supplementation, by extending this service to antenatal women it could increase the amount of breastmilk available but also help with pre-emptive breastfeeding support if/when babies do not latch post birth. In addition, GWH has around a 40% induction of labour rate, breastmilk pumping for one hour a day has been shown to increase cervical ripening. This is an area we were keen to discuss in the group with attendance of women undergoing induction, also encouraging hand expression to have breastmilk available post birth.

High quality support and information: We put up posters with information, for example about what to expect in nappies, tummy sizes and where to find support following discharge.

Attendance of partners: We also encountered and needed to consider if partners could attend the group. To start with, we had very small numbers of birthing people attending, therefore it was possible to check with each person if they would be comfortable with partners attending. If we have a larger turnout, then we have to exclude partners due to space, but birthing people can still choose to have bedside support with partners involved if this is their preference.

Wider staff engagement: Comms were sent out to community teams and on the intranet so that the wider team were aware of the change, including the senior maternity team by discussing at the maternity and neonatal governance meeting. Information about the group was also distributed on facebook and via our local MVP representative, so that birthing people were aware that this support was available.

Keeping communication open with staff members was really important, to gain instant feedback, listen to their ideas, and also to utilise their support for the group, encouraging families to attend, but also to ensure that the feeding support group was not used as the sole support families were being offered. It was really important that the team understood that not everyone would be comfortable in a group setting, and that individualised care was to remain the top priority.



Measurement:

Patient outcomes:

We will continue to collect data on breastfeeding rates and supplementation rates at time of discharge and 2 weeks post discharge.

We will also monitor rates and length of readmissions for weight loss, feeding support and jaundice.

Short term, we have collected direct feedback from several women and birthing people who have attended the groups. This is a qualitative measure of patient centered care. We will also monitor complaints to assess if feeding-related complaints reduce following implementation of the project.

While outside the scope of our project to measure, we have outlined some potential impacts on infant health and maternal mental health based on existing literature in the results section.

Environmental sustainability:

The carbon footprint (expressed in Carbon Dioxide Equivalents, or CO₂e) is a common measurement used to show environmental impact. Andresen et al. (2022)'s study reports that the carbon footprint of breastfeeding based on the additional nutritional needs of women is 72.5 kgCO₂e per 8 weeks and the carbon footprint of formula feeding 100 kgCO₂e based on the production of formula and equipment, preparation and sterilisation. This results in an additional carbon footprint of 0.49 kgCO₂e per day of formula feeding over breastfeeding, which has been applied to the formula feeding rate at birth, at hospital discharge and at discharge by the community midwife before the project and after the project. It was assumed that if on average birthing people were discharged postnatally after 24 hours, the % of birthing people who formula fed was the average of the % of birthing people formula feeding at birth (20%) and % of birthing people formula feeding at discharge (28.5%) resulting in an average of 24.25%. Similarly, the % of birthing people formula feeding during the first 2 weeks postnatally was the average of the percentage of birthing people formula feeding at hospital discharge (28.5%) and the percentage of people formula feeding after 2 weeks postnatally (40.5%) resulting in an average of 34.5%.

The carbon impact of change in readmission rates and outpatient attendances due to jaundice, lack of weight gain or other infant feeding problems was based on the change in carbon footprints of units of healthcare activities. The carbon footprint of readmission bed days was estimated by applying the emissions factor for a low intensity bed day (Sustainable Healthcare Coalition (SHC) 2015). For outpatient attendances the emissions factor of a low intensity bed day was divided by 24. A change in readmissions and outpatient appointments also affects the associated travel of birthing people. To calculate the greenhouse gas emissions associated with travel, the carbon footprint per mile travelled was taken from the Health Outcomes Travel Tool for Great Western Hospital and applied to the average distance of a return journey as recorded in HOTT.

To promote the breastfeeding support group on the wards laminated posters were produced and hung up. The carbon footprint of the posters included the material (paper and laminate pouches), energy use of lamination (0.0048 kWh/poster) and disposal via waste-to-energy.



Economic sustainability:

There is no cost to run the service, although it uses staff time, the hope is that by centralising feeding support, maternity staff will be making better use of their time overall. In the longer term, if the project is successful at reducing feeding issues, there would be a reduced number of infants readmitted due to jaundice and weight loss, and for feeding support. The average time to be readmitted for weight loss, or for jaundice, is 2 nights, which costs approximately £966. An outpatient appointment costs around £50, not including blood tests. Therefore, with better feeding support, we would anticipate a financial saving from these areas. This is something that we will monitor over the coming months.

Social sustainability:

Impacts on women were measured through a survey, complaints, supplemental audits and NMVP survey conducted previously. We plan to survey staff again to ask if the group has changed their workload.

Results:

Patient outcomes:

Improving effectiveness and person-centred care: Since implementing the group, we have received some great feedback from families:

“Excellent care and great breastfeeding support which has given me confidence to go home and exclusively breastfeed my baby. Thank you to all the staff on Hazel Ward, a credit to the GWH and maternity I’m general.”

“Great breastfeeding support from lovely knowledgeable staff”

“The midwives in delivery were really lovely and supportive staff in Hazel Ward especially the feeding lady Charlie who was just fantastic and helped me endlessly and now I feel very confident in breast feeding my baby.”

“Very good care, the midwives are just brilliant and very attentive and fantastic help with breastfeeding.”

The last complaint received for an infant feeding issue was October 17th. Since the introduction of the groups there have been no complaints. One concern was raised from a parent who stayed for 4 days postnatal (first two days baby in neonatal unit) with feedback that they wished they were informed of the groups sooner. This issue was likely due to the first two days falling over a weekend before the 7-day service was established. They did attend when their baby came back to them and were happy when they found out about it for support. As the group now runs 7 days per week, we anticipate the risk of this issue reoccurring has reduced.

Breastfeeding rates at discharge and 2 weeks post discharge

Whilst it is difficult at this early stage to know how much of an impact the project has made, outcomes we are hopeful to see would be improved breastfeeding rates, and reduced supplementation,



Reducing readmissions and long term breastfeeding outcomes:

fewer readmissions for weight loss, feeding support and jaundice. We are confident from direct feedback that several birthing people went home with the plan to exclusively breastfeed, following the support and information they received. There is also evidence that improving breastfeeding support, whilst being aware of risk factors, can prevent neonatal readmission for hyperbilirubinemia (5).

The WHO recommends *“Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health.”* Exclusive breastfeeding has been shown in multiple studies to reduce the occurrence of chronic diseases, such as type 2 diabetes, obesity, cardiovascular disease and osteoporosis (4). Therefore, breastfeeding has ongoing, and far reaching implications for public health, future healthcare sustainability and population health.

Long term maternal mental health outcomes:

Natasha Baker, in her Unicef BFI blog, states *“There is a growing body of evidence examining the mental health of women who, despite intending to breastfeed, have been unable to. There appears to be a distinct association between unmet breastfeeding intentions and symptoms of postpartum depression and anxiety.”* (reference 2) Maternal bonding is affected by poor maternal mental health, which in turn, negatively affects long term infant health.

Environmental sustainability:

The below tables show data from November 2023 to January 2025.

Table 1:

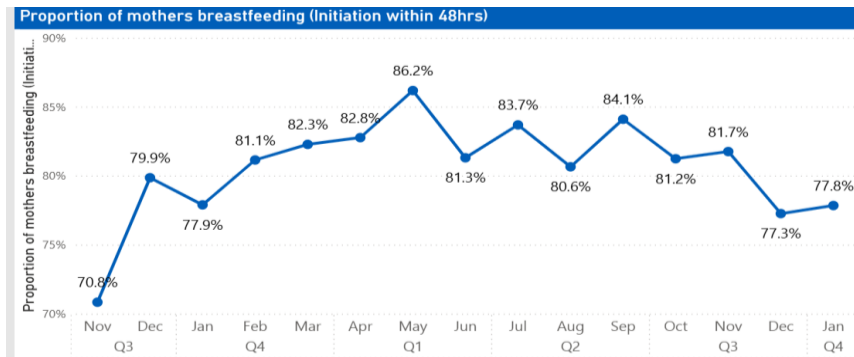


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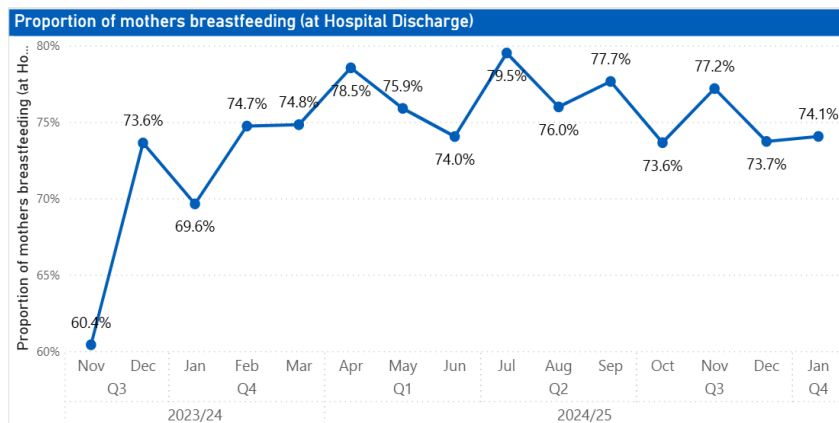
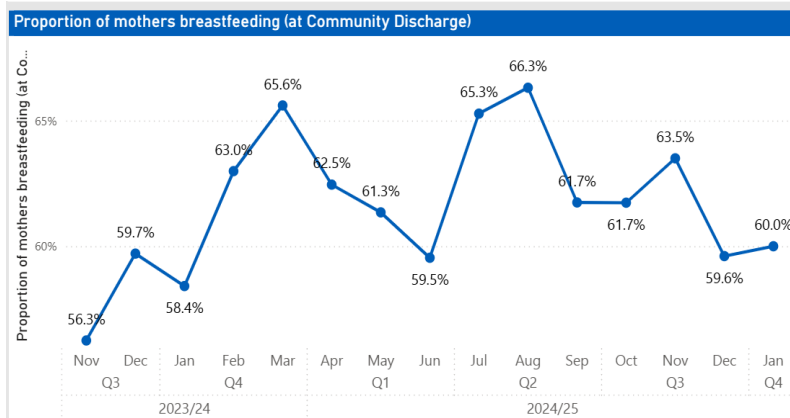


Table 3:



Analysis of data (Comparing November 2023-January 2024 with November 2024-January 2025) Initiation within 48 Hours increased from 76.2% to 78.9% a 2.7% improvement. Rates at Hospital Discharge increased from an average of 69.4% to 73.8%, a 4.4%. Rates at Community Discharge increased from 58.7% to 61.0%, a 2.3% improvement. While there is improvement, the trend appears to have begun prior to the introduction of the daily breastfeeding groups, so cannot be directly linked to our current project.

The following factors may have influenced data collection since initiation of the groups.

- Acuity: If there were higher numbers of high-risk births or NICU admissions, this could impact initiation and discharge breastfeeding rates.
- New Starters and establishment of groups: The groups require time to be established. In November they did not run everyday, and time is needed to ensure all staff and volunteers involved in facilitation of the groups feel confident and are competent to provide consistent levels of support.
- New Computer System (Jan 2025): Possible data entry issues, misreporting, or differences in reporting compared to the previous system could affect the numbers recorded.

For these reasons, a longer time period of data monitoring is required to assess if the daily support groups will lead to an increase in breastfeeding rates. Below we have modelled what the greenhouse gas (GHG) emissions impact of a 5% increase in breastfeeding rates at hospital discharge and 2 weeks after birth would be.

The total carbon footprint of formula feeding over breastfeeding in the year before the project was 9,729 kgCO₂e, taking the breastfeeding rates of 4,200 infants at birth, at hospital discharge and 2 weeks after birth into account. With a 5% improvement in rates, the carbon footprint would reduce to 8,340 kgCO₂e, saving 1,389 kgCO₂e.

Carbon footprint impact of a change in breastfeeding rates

	Emissions factor (kgCO ₂ e/unit)	% before	Carbon footprint before (kgCO ₂ e)	% after	Carbon footprint after (kgCO ₂ e)
Breastfeeding rate at birth		80%			
Breastfeeding rate at discharge from hospital (Average 24 hours post birth)	0.49	71.5%	499	76.5	448
Breastfeeding rate 2 weeks post birth	0.49	59.5	9,230	64.5	7,892

As the impact of the project on readmission inpatient bed days and number of outpatient attendances due jaundice, lack of weight gain and other feeding related problems has not been yet recorded it was assumed that a 1% change in these indicators might be achieved when improving breastfeeding rates by 5%. The GHG emissions related to inpatient stay, outpatient attendance and patient return journeys have been predicted to reduce from 19,673 kgCO₂e to 19,476 kgCO₂e, saving 197 kgCO₂e.

Carbon footprint impact of reducing readmissions, outpatient appointments and associated travel

Potential impact	Unit of measure	Number	EF (kgCO ₂ e/unit)	Carbon footprint before	Carbon footprint after
Re-admissions for jaundice (related to lack of weight gain)	Number of inpatient days	476	37.9	18,040	17,860
Outpatient appointments due to lack of weight gain/jaundice	Number of outpatient appointments	87	1.58	137	136
Patient travel	Return journeys	325	4.6	1,495	1,480

The carbon footprint of the 22 posters was estimated to be 1.29 kgCO₂e. This results in total GHG emissions savings of **1,585 kgCO₂e**.

Economic sustainability:

The service has been implemented as part of routine care on the unit, and therefore there have been no cost changes. A reduction in readmissions and/or appointments for jaundice and lack of weight gain will bring financial savings. A 1% reduction in both would bring annual savings of £4,641.

Social sustainability:

Families:

By offering a support group, we hope to empower birthing people to get the support they need and be welcomed into a group setting, with the hope that they would feel more comfortable attending support groups in the community if they desired. The group also aims to offer evidence-based information, filling gaps that families may have had, for example, if they were unable to attend antenatal classes. By offering extra support, families have greater choice and options in the service we provide and by providing daily groups, they will be reassured that in times of great staffing pressures they will have access to feeding support on a regular basis.

Staff:

Staff feel more confident in offering support in a group setting, developing their skills and providing job satisfaction, whilst using their time effectively. When asked about if midwives felt they had the time to support families with infant feeding, half (6/12) responded rarely or very rarely. We hope that by offering this extra support, families can attain the support from here, so that midwives feel less pressure to give all the feeding support themselves.

Discussion:

Overall, the implementation of the support group has received positive feedback from staff and patients. It has been well supported by most of the maternity team, however, some issues did arise. Attendance at the group was initially quite poor, some days nobody came, or just one woman or birthing person. We adapted how we informed families the group was on, by announcing in each bay, and encouraging staff to mention the group during introductions. Attendance has since improved and hopefully will continue to do so. In hindsight, we should have thought more about the communications around the group, perhaps having a launch event. It has been suggested, and may be developed as a next step, to have one support group on each shift, so introducing a group overnight when birthing people are often awake feeding their babies. This would increase the chance of birthing people being free and give more access to the support, especially for those who are discharged after a short stay.

Making sure the rota was covered was challenging, made easier when the transitional care (TC) model was introduced as generally there would be a support worker allocated to TC that could support the group. It is difficult to assess impact in terms of breastfeeding rates and readmissions at this early stage in the change. These are metrics that will be monitored over the coming year.

We initially wanted to reduce the carbon footprint of infant feeding by also changing an area in the Woodland Suite to a milk preparation area, so that if babies needed formula supplementation, or if parents decided to bottle feed their babies, there would be a place where they could sterilise their own bottles and use powdered formula instead of single use, ready-made bottles. These bottles contribute to a large amount of wasted formula as they can only be used for one feed. However,



due to the time it will take for the estates team to have the area changed, we were not able to include this in this project. This is something we still plan to do and will monitor the amount of formula bottles ordered.

Conclusions:

If I were to restart the project, I would spend more time planning the process, perhaps looking at funds to improve the space further so that it was a more welcoming environment for families. Also, at the time of writing the report, the new staff room is yet to be completed, therefore the Woodland Suite is still a shared space which I think is hindering families from using the space more. Making changes with space utilisation, when involving estates, takes a considerable amount of time, therefore conversations around this need to be started early.

Regular meetings with the project team were essential to ironing out issues that arose at the time, and having communications with the postnatal ward team was important. We plan to continue the support group, and perhaps starting a further one, whilst it may not always be well attended, having the offer of extra support gives families options and supports staff whilst dealing with feeding issues, as another tool. The milk kitchen area for parents we are hoping to complete towards the end of the year, this will create a space to give better support to those wanting or needing to, formula feed, providing more inclusive care and better information for families.

In addition, providing additional breastfeeding training prior to the roll out of the project would have been optimal. We now have a band 2 MSW who is undertaking her peer supporting course, and we are in the process of upskilling our band 3 MSW's with an additional breastfeeding training day. This will be a continual process to provide breastfeeding support to families in postnatal services.

References

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- 3) Slomian, J. *et al* . Consequences of maternal postpartum depression: A systematic review of maternal and infant outcomes. *Women's Health* April 2019
- 4) UNICEF 'Benefits of Breastfeeding' [The benefits of breastfeeding - Baby Friendly Initiative](#)
- 5) Seagreaves, K. *et al* . Supporting Breastfeeding to Reduce Newborn Readmissions for Hyperbilirubinemia. *Nursing for Women's Health* (17, vol 6) p498-507 December 2013
- 6) Andresen E C, Hjelkrem A R, Bakken A K, Andersen L F. Environmental Impact of Feeding with Infant Formula in Comparison with Breastfeeding. *Int J Environ Res Public Health*. 2022 Jun; 19(11): 6397. <https://doi.org/10.3390/ijerph19116397>
- 7) SDU (2015). Care Pathways: Guidance on Appraising Sustainability – Inpatient Day Module
- 8) Sustainable Development Unit. Health Outcomes Travel Tool. 2018.

