‘Keeping Mum’s & Babies Together’
Reducing or Avoiding Term Admissions into the Neonatal unit:
‘Quick Wins’, ‘Colostrum Collection Initiative’ & ‘The First Hour of Care Project’

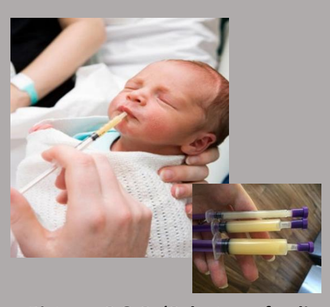
Dr Lucinda Shawley, Service Lead for Postnatal care, Quality Improvement Lead for Maternity, Hampshire Hospitals Foundation Trust (HHFT)
Quality Improvement Fellow HEE - Wessex

Picture 1. ‘Mum & baby together’

Project focus areas:
- **1.‘Quick Wins’/changes from Data Collection, Audit & Analysis**
- **2.‘Colostrum Collection initiative’**
- **3.‘The First Hour of Care’ project**

Colour key

Project focus area 1.



Pictures 2 & 3. ‘Colostrum feeding via syringe’

Project focus areas 2 & 3.

Figure 2. Crucial ‘First Hour of Care’

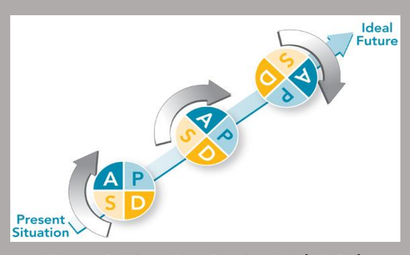


Figure 3. Plan, Do, Study, Act (PDSA) Cycles used for testing and implementing changes

For Further Information/Contact:
Dr Cindy Shawley
Quality Improvement Project Lead
Lucinda.shawley@hhft.nhs.uk
Tel: 07774494785
Hampshire Hospitals Foundation Trust (HHFT)

1. Background

This local project is linked to the National **ATAIN** work**: A**voiding **T**erm **A**dmissions **I**nto **N**eonatal units.
- The current focus is on reducing harm and avoiding unnecessary separation of Mother & Baby to provide safer care for babies.
- There is overwhelming evidence that separation of mother and baby so soon after birth interrupts the normal bonding process, which can have a profound and lasting effect on maternal mental health, breastfeeding and long-term morbidity for mother and child. This makes preventing separation, except for compelling medical reasons, an essential practice in maternity services.
- 60% of babies admitted into Neonatal units are term babies (≥37 weeks gestation). The national target is to reduce these term admissions by 20% by 2010.
- There is local variation: clinical practice/admission policies, midwifery skills/resources and fail safe decision-making of inexperienced junior doctors, but some term admissions are entirely appropriate.
- Term live births in England are decreasing, however term admissions to Neonatal units are increasing.
- 33% of babies are admitted with respiratory symptoms, these are often worsened by babies having low temperatures (hypothermia) and low blood sugars (hypoglycemia) & many come directly from theatres or birthing rooms. Half of these babies were under an hour old.

This project seeks to identify areas where quality improvements can be made to address some of our local issues using audit and data analysis, review findings, observational studies and the targets of the national framework as a guide.

2. Aims of the Project

- To reduce or avoid term (≥ 37 weeks gestation) babies from being admitted to our neonatal units & therefore unnecessary separation of Mum’s and babies.
- To identify & define areas within the project remit where I could make improvements in our local HHFT service. To then plan, design and implement sustainable service changes & initiatives to make quality improvements within the key areas identified and in line with the national ATAIN framework showing changes in outcomes and a reduction of admissions by the end of 2019.

3. Design (Information to shape the project)

The project was informed by:
Data Collection & Analysis of multiple audits undertaken:
- 1. Audit of numbers of term babies admitted to the Neonatal unit (NNU) from 2107 – 2018
- 2. Audit of reasons for babies admitted to the Neonatal unit (Figure 1.) to inform/focus the project
- 3. Audit of all elective Caesarean Sections done before 39 weeks (optimum time) - nationally babies born at 37-38 weeks are twice as likely to be admitted to neonatal services as those born at 39-42 weeks gestation.
- 4. Audit and analysis of those babies/births from Audit 3. who were admitted to the Neonatal unit (n=30) and the obstetric reasons why the elective caesarean was done before 39 weeks.
- Risk - two ‘cold’ babies were admitted to the neonatal unit with un-recordable temperatures – no temperature had been taken after the birth. *No babies on this unit were having their temperatures taken. A Temperature audit of our theatres, Mother’s and Babies followed this to identify any risk/route cause.
- Women’s experiences/findings from a local postnatal review (Shawley, 2017).
- Meetings regularly with paediatricians, safety and risk teams, local ATAIN team.
- Observational studies of birth on both acute units (normal birth and Elective caesarean/C-section).
- Midwifery conversations

Areas Identified to focus project on (classifications in Figure 1) :
- Feeding/Weight Loss (including re-admissions)
- Temperature/Hypothermia (cold babies)
- Hypoglycaemia Prevention/early feeding

(these are often reported within other admission categories - respiratory distress/monitoring/poor condition)

Figure 1. Pareto Chart showing the number and reason for term admission to Neonatal units (both sites) HHFT

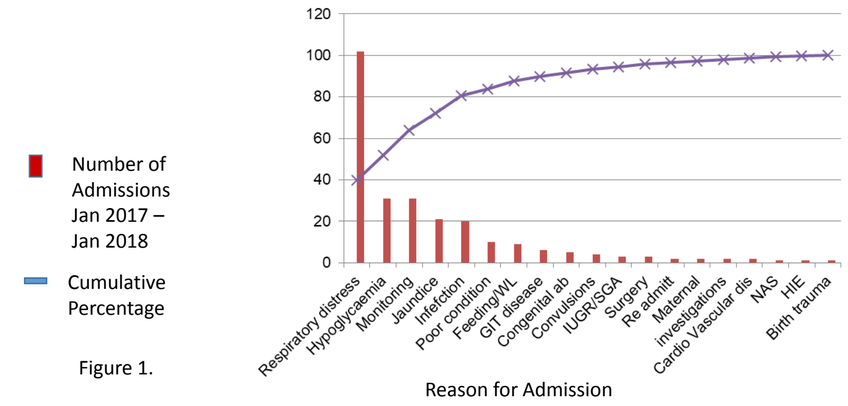


Figure 1.

4.Key people involved – Multi-disciplinary Team

Project Manager
Associate Director of Midwifery (HOM)
Consultant Paediatrician
Safety Champion/Risk Team
Communication Team
Maternity Support Workers (MSW’s)
Ward Clerks (IT & data support)
Data expert
Neonatal Nurses/Matron
Midwives/Maternity Matrons
Women – our ‘Service Users’

Picture 4. ‘Some of the Team at Work’

5. Strategy (Phase 1) – Identifying Issues/problems

Early issues were highlighted within the background work, data collection and audit and focusing the main project:
‘Quick Wins’:
1. An increase in Re-admissions for feeding problems and weight loss (from home)
Audit showed that this was mainly related to breast feeding for the first time – The Day 3 postnatal visit was missed
2. Baby temperature at birth not recorded
Risk team presented two babies with un-recordable temperatures on the Postnatal ward. This highlighted that baby temperature had not been taken or recorded on this site for some years highlighting inconsistent standards.

The ‘Colostrum Collection Initiative’ evolved from the following issues:
3A. Babies were admitted with Hypoglycaemia (low blood sugars) particularly babies of Diabetic Mums and – Intrauterine growth restricted (IUGR)/small for gestational age (SGA), also including normal size babies
3B. Breast feeding mums did not want their babies to have formula milk
This is sometimes given if babies blood sugars are low or if the baby has problems latching at the breast
3C. Breast milk supply issues (or milk has not come in) affects ability to increase baby’s blood sugar
Some women have milk supply issues/delay in their breast milk coming in and formula is offered

Issues related to the development of the ‘First Hour of Care’ project:
4. Hypothermic/Cold Babies
Babies admitted from cold theatre/birthing environment (can be linked with no. 2)
5. Observational studies of birth showed:
- Cord clamping often done for 1 min or less
- Theatre techniques vary for drying baby and keeping it warm
- Inconsistencies across sites/midwives care
- Feeding often not within an hour
- Skin-to-skin often not uninterrupted/not always done/time period varied

The first hour of care was highlighted as crucial for basic care and support for mum and baby (Figures 2,4 & 5)

5.Strategy (Phase 2) – Change/Improvement

‘Quick Wins’ - Plan, Do, Study, Act (PDSA) cycles (Figure 3) to plan implement improvements (project focus area 1)
1. Day 3 community visit Re-instated
All first time mum’s (primips) & women who have had a baby before (multips) who are breast feeding for the 1st time - visited in the community on Day 3 by a Maternity support worker (MSW) to support breast feeding and weigh the baby
2. Re-introduce Baby Temperature at Birth
Temperature has been re-introduced on the acute site that had ceased doing this. This has now been standardised across HHFT in order to identify cold babies and to action appropriate within the thermoregulation pathway

5. Strategy (Phase 2) – Change/Improvement (continued)

‘Colostrum Collection Initiative’ (project focus area 2)
Expressing and Collecting Colostrum (first milk) from 37 weeks pregnant:
- Colostrum is the perfect source of nutrition for the baby, it contains antibodies which protect them from infection and helps their immune system to develop. It also helps the digestive system to develop which protects the baby form allergies and encourages the baby to pass the first stool (meconium)
- This initiative can be offered to All women who have chosen to breast feed - with a focus on our Elective/Planned caesareans and small for gestational age babies
- Milk is expressed, collected and frozen in syringes and taken into the hospital when in labour or soon after the birth

Advantages of new initiative: (relating to 3A, B & C)
- Colostrum can be used to support the babies who have low blood sugars, instead of formula
- It is readily available if baby needs to be admitted to the Neonatal unit
- It supports baby with the first feeds if problems latching at the breast
- Women know how to hand express before breast feeding
- Breast milk has come in earlier for many women

Process:
- ‘Colostrum Collection’ packs designed and made up (n=500)
- All new leaflet and information designed and printed
- Support/engagement of service-users (women)
- Communication team involved – Website information, QR codes
- Engagement of midwifery staff in hospital and community
- Flyer, posters, Information sheets for midwives and women

Picture 5. ‘Colostrum Collection Pack’

‘First Hour of Care’ after the birth of the baby (project focus area 3)
The focus is on the first hour of care of a baby’s life as good clinical care at this early stage can make a real difference to outcomes. Interruption of the normal process of adaptation can cause problems for a newborn baby born at full term. It emphasises the importance of risk to the baby and early actions to prevent compromise, which may result in separation of mother and baby and avoidable medical problems for the baby. (Figure 2. crucial 1st hour of care).

Birth Environment temperature (4)
Theatre temperature is now set on one acute site and increased daily on the other to ensure warm

Standard for baby temperature at birth
All babies will have temperature recorded

Observational studies (5) to inform the ‘first hour of Care’ on both sites for normal birth and caesarean
Focus on: Supporting baby’s adaptation to life by:
- Delayed cord clamping,
- Keeping baby warm,
- Skin to skin - uninterrupted,
- Feeding within the first hour.

See detail in Figure 4. and in the ‘First Hour of Care’ and ‘Keeping Mum’s & Babies together’ pathway below.

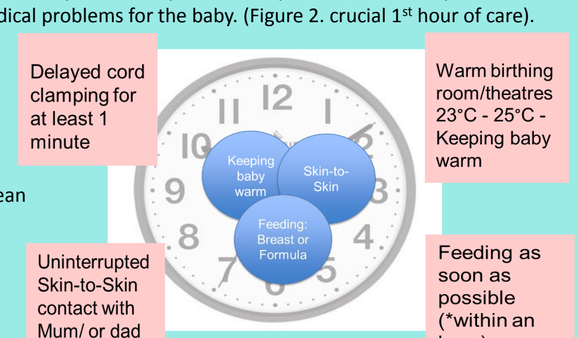
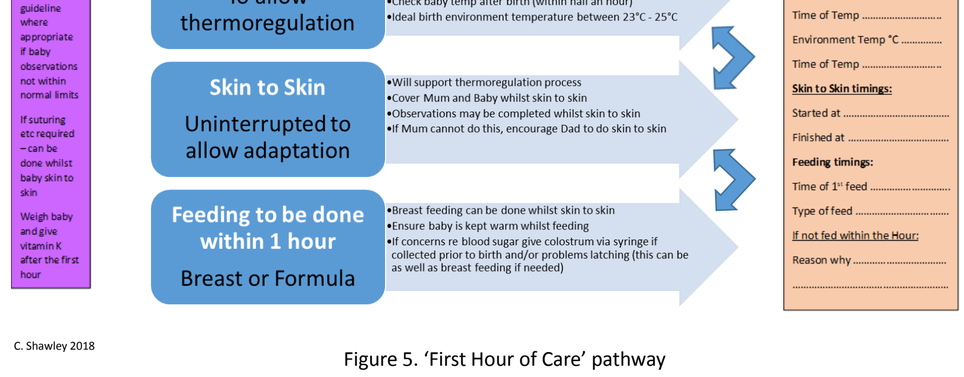


Figure 4. ‘First hour of care’

‘First Hour of Care’ – ‘Keeping Mum’s & Babies together’
Proforma/Pathway to promote normal adaptation to life



C. Shawley 2018

Figure 5. ‘First Hour of Care’ pathway

6. Outcome & Results

‘Quick Wins’ – Changes introduced Quickly
1. Feeding & weight loss - Day 3 community visit
Baby weight & breast feeding support on Day 3 has reduced admissions with feeding/Weight loss from **12 in a year (2017) to 4 in 6 months period (2018)**
2. Baby Temperature at Birth standard for HHFT
Variable documentation on both sites - **60% - 90% complete**
*Now (August 2018) made **mandatory field** on IT system to ensure recorded for **All babies -100% now achieved**

‘Colostrum Collection Initiative’ – introduced in May 2018
Measured positively by the women (service-users) who are using and promoting this initiative
Benefits voiced by staff - women’s knowledge about hand expressing and breast feeding has increased
Using colostrum to support babies with low blood sugars in first hour and after **(3A)**
Breast feeding mums are able to use colostrum that has been collected earlier instead of formula milk **(3B)**
Breast milk supply has come in earlier for many women **(3C)**
31 term admissions with hypoglycaemia in 2017 (12 months). 1 in May/1 in June (2 so far) 2018

‘First Hour of Care’ Project – Pathway designed to be tested, introduced & measured
Cold Birthing Environment Temperatures (4)
Action taken to prevent babies from getting cold in Theatres/Birth Environments – Theatre temperature is now set on one acute site, and increased daily on the other to ensure warm enough environment. This has much improved, there have been no babies admitted with hypothermia from improvement (May) to date
To ensure that we are not putting more babies at risk by doing elective caesarean’s early:
Audit (no. 4) all 30 babies admitted to the neonatal unit had obstetric reasons for the early delivery
Observational studies (5) - highlighted themes which have been used to develop the ‘First Hour of Care’ pathway which will be assessed once in clinical practice (Figure 5)

7. Next Steps

1. ‘First hour of care’ pathway will be tested and introduced with support of matrons/team leaders.
2. Training to raise awareness re ‘back to basics’ and detail about the ‘first hour of care’ pathway.
3. Audits on baby temperature & re-admissions will continue and communication of results to staff.
4. Nominated health professionals/teams to ensure Colostrum Collection service continues and is sustainable for the future. Antenatal teachers aware to communicate this to women and partners.
5. To measure our breast feeding rates with regard to colostrum collection initiative to see if increased.
6. Awareness of ‘First Hour of Care’ project and how to ensure measures are taken to continue this.
7. Monitor term admissions & adhere to/follow guidance to prevent admissions of our term babies to Neonatal units

8. Challenges

- Data Quality of Badger net (neonatal electronic system) and CSC (maternity data) to inform the project direction & admission reasons often multi-factorial/unclear
- Engagement/regularly meetings with the Associate director/Head of Midwifery & the ‘ATAIN team’
- Focusing my local project in line with the national agenda & having more than one area/project focus

9. Lessons learnt

- Early definition of the project, providing clarity and therefore the focus/key areas to address
- To plan the project time lines and adhere to them where possible
- To ensure engagement and regular meetings/support from Director level and ATAIN links