



The Milky Way:  
Bestowing early maternal breast milk in the first hours

Tuesday, 30<sup>th</sup> April 2024, 09:00 - 16:00 BST

Marriott Hotel, Metrocentre, Gateshead

<b>Time</b>	<b>Agenda Item</b>	<b>Speaker</b>
09:00 – 09:30	Registration and refreshments	
09:30 – 10:50	Houston, we've had a problem (Jim Lovell)	Caroline Buckley Neonatal Manager Northern Neonatal Network
	Ignition sequence start. We have lift off. Engines at full power!	Julia Wood MatNeoSIP Lead North East and North Cumbria
	That's one small step for man, one giant leap for mankind (Neil Armstrong)	Patient voice
	In the business of discovering new worlds, problems aren't stop signs, they're the guidelines (Robert H. Schuller)	Ros Nunn Public Health Practitioner/Specialist Lead for Infant Feeding, LMNS/ICB
10:50 – 11:10	Break	
11:10 – 12:30	Atmospheric Pressures	Dr Chloe Allen Neonatal Registrar Northern Deanery
	Failure is not an option (Gene Kranz)	Julia Wood
12:30 – 13:30	Lunch	

13:30 – 16:00	Beginners Pack to Improvement	Dr Alessandra Glover Locum Consultant in Neonatology NeoTRIPS Quality Improvement Co-Lead
	I know the sky is not the limit, because there are footprints on the moon, and I made some of them (Buzz Aldrin)	Dr Stefan Zalewski Consultant Neonatologist  Dr Kristina Chmelova Neonatal Registrar  Maria Douglass Neonatal Infant Feeding Lead  The Newcastle Hospitals NHS FT
	Force Field Analysis	Julia Wood
	A dream is alive (Randy Pausch)	Dr Sarah Bates Consultant Paediatrician and Neonatologist Great Western Hospitals NHS FT
	To infinity and beyond (Buzz Lightyear)	Caroline Buckley
16:00	Close	



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# "Houston, we have a problem"

Following a plan is part of the solution. To  
achieve it you need the right information.



? the  
Houston  
Project



**Maternity and  
Neonatal**

**Ignition sequence start.  
We have lift off.  
Engines at full power!**

**Julia Wood  
MatNeoSIP Lead**

 [@NatPatSIP](https://twitter.com/NatPatSIP) / [@MatNeoSIP](https://twitter.com/MatNeoSIP)

[www.improvement.nhs.uk](http://www.improvement.nhs.uk)

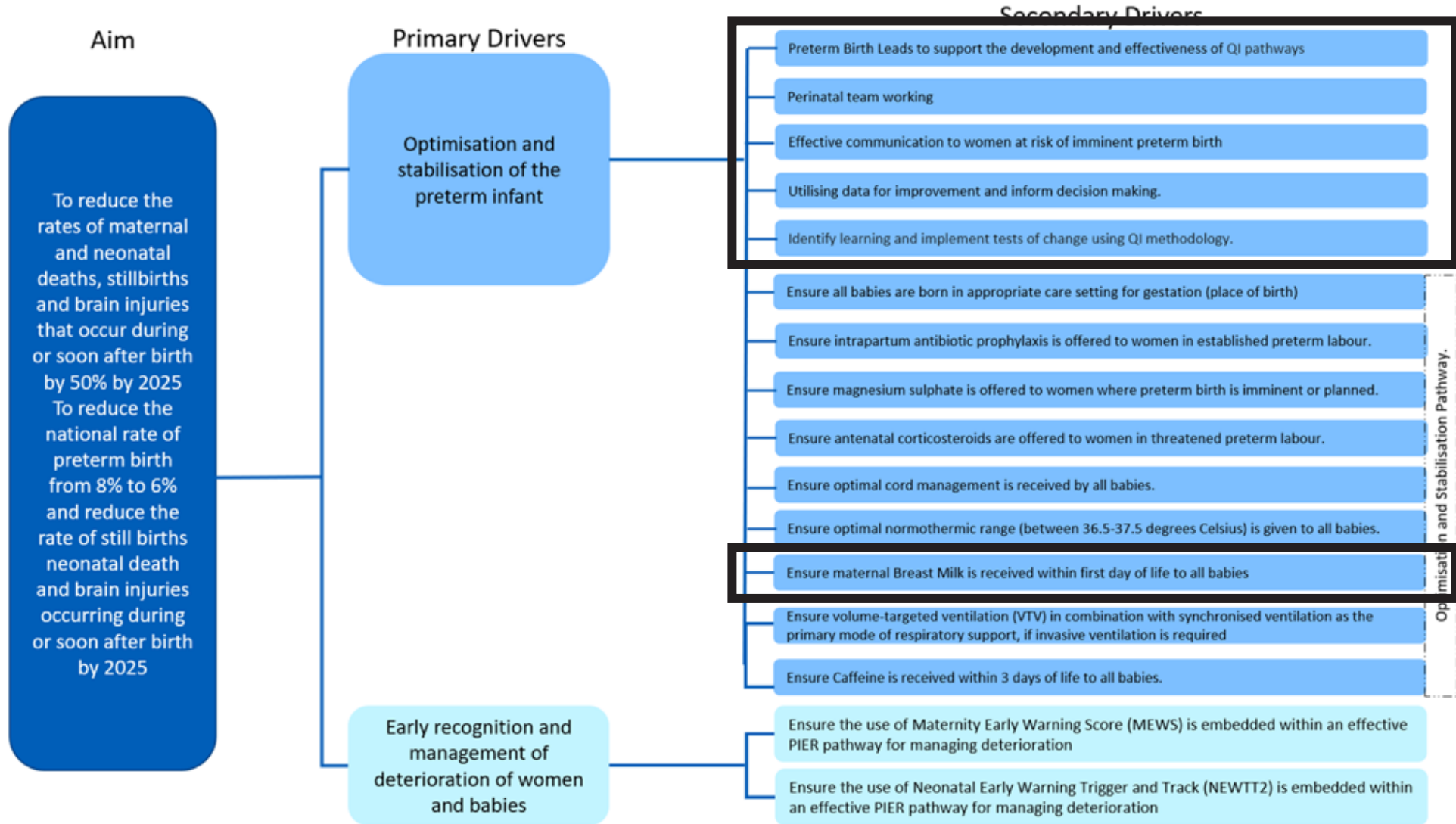
Led by:  
**NHS England  
NHS Improvement**

# Overview of MatNeoSIP

- > National programme
- > Started in 2017
- > Funding for the programme has changed over time – currently funded by the Maternity and Neonatal Programme (MNP)
- > 15 Patient Safety Collaboratives support delivery of the programme – PSC NENC
- > Accountable to NHS England
- > Every Trust been involved (initially as a phased approach)
- > Specification each year changes in line with priorities
- > Specification been relatively stable the past 2 – 3 years

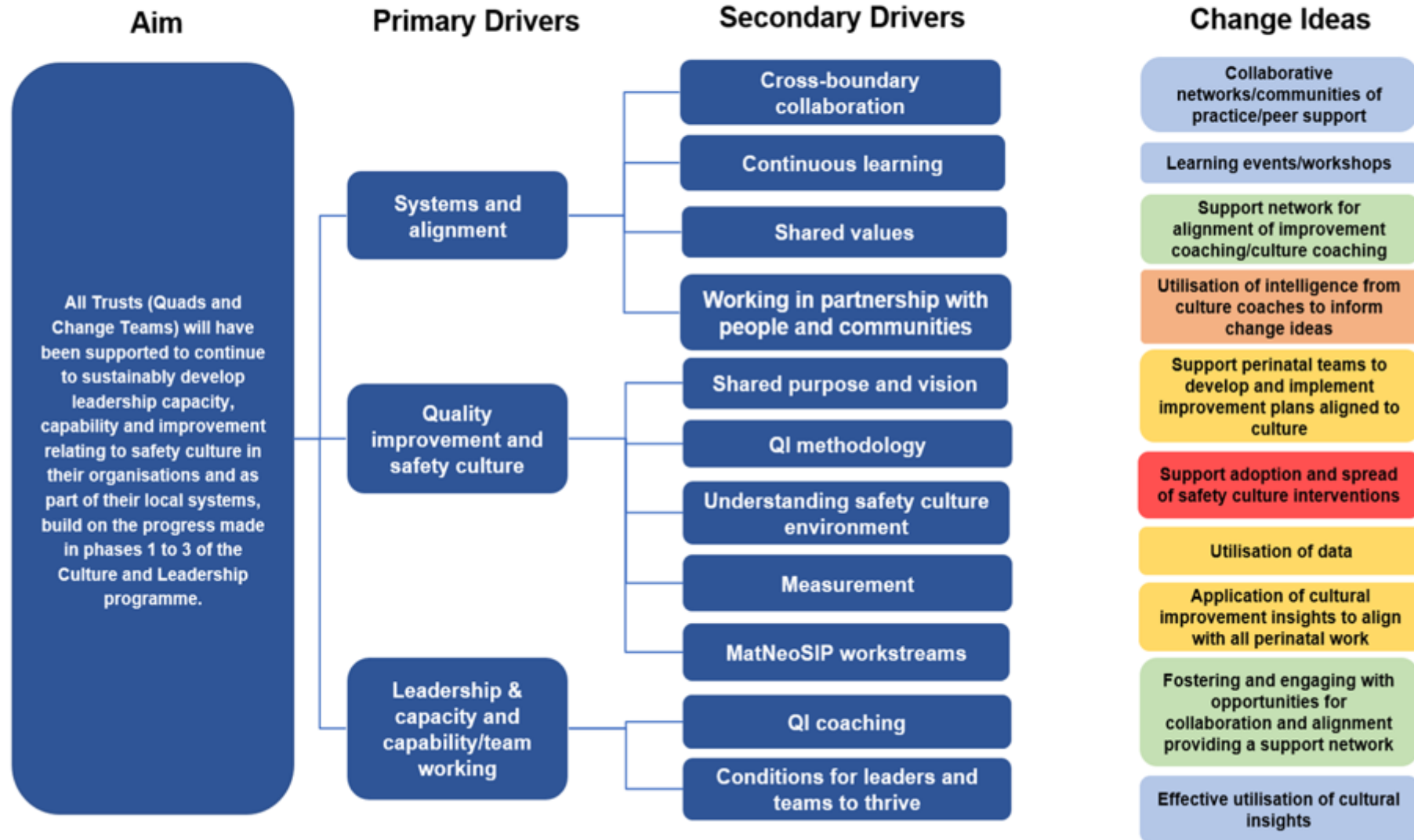


## Driver Diagram 2024/25



# Perinatal Culture and Leadership Programme – 2024/25

## Driver Diagram 2024/25



Work together in Trust groups

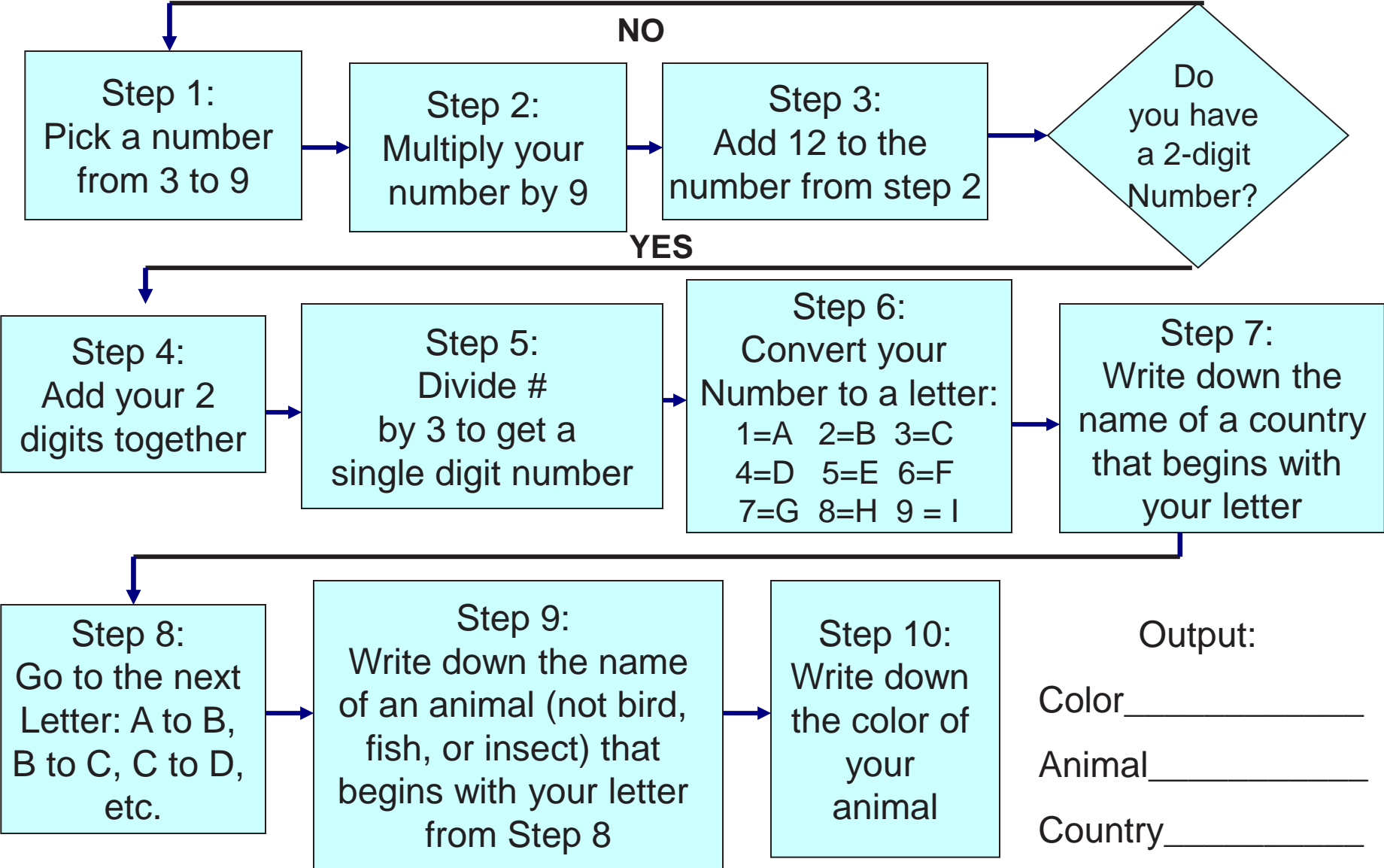
Make sure you all know each other

**Maternal Breast Milk Action Plan**

Trust:

WHAT AND WHERE?	WHY?	HOW?	WHO LEADS?	WHO NEEDS TO BE INVOLVED?	COMPLETION DATE?	NOTES

# Complete each of the steps in this pathway





**"Every system is perfectly  
designed to achieve the  
results it gets"**

# Data packs

- > Anonymised – using data for quality improvement
- > Data from Neonatal Badgernet – only as good as the data inputted into the system
- > < 34 weeks, < 37 weeks and 37+
- > Percentages – if you want numbers come and see me



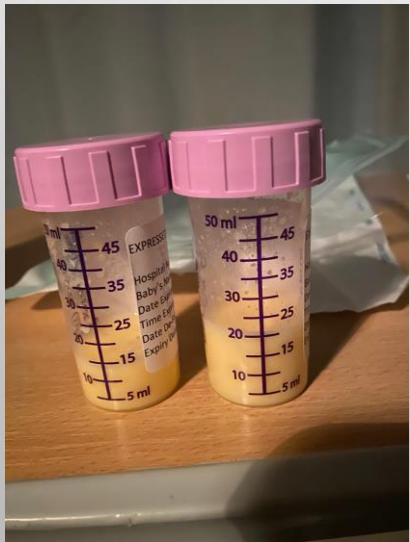
The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The text is centered on the slide.

# **MATERNAL MILK**

MEGAN CURRY

30<sup>TH</sup> APRIL 2024











**North East and  
North Cumbria**

# THINK MOTHER !

**In the business of discovering new worlds, problems aren't stop signs, they're  
the guidelines**

**(Robert H. Schuller)**

Ros Nunn

Public Health Practitioner / Infant  
Feeding Specialist Lead, Public Health  
Prevention in Maternity Programme

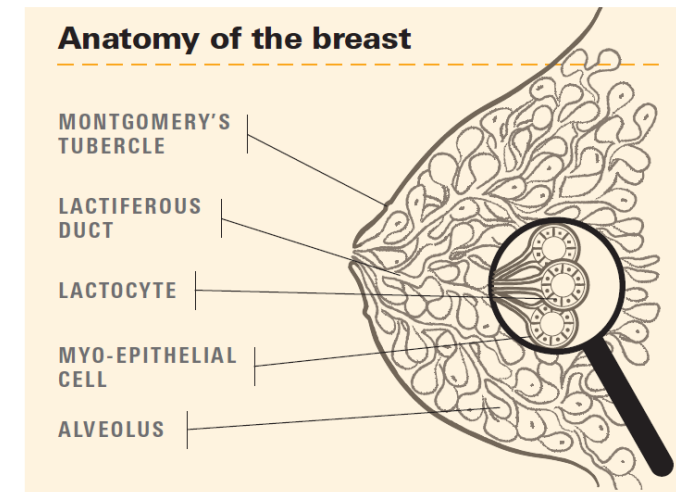
North East & North Cumbria Regional  
Lead , National Infant Feeding Network

Imagine that the world had invented a new 'dream product' to feed and immunize everyone born on Earth. Imagine also that it was available everywhere, required no storage or delivery—and helped mothers to plan their families and reduce the risk of cancer ... Then imagine that the world refused to use it ... This scenario is not, alas, a fiction. The 'dream product' is human breast milk, available to us all at birth, and yet we are not using it.

*Dr. Frank Oski 1991*

# Stages of lactation

- **Lactogenesis 1** – Breast development and colostrum production from approx. 16 weeks' gestation
- **Lactogenesis 2** – Onset of copious milk secretion occurring between 32 and 96 hours after birth
- **Lactogenesis 3** – Maintenance of milk production



# After birth

- Oestrogen and progesterone levels drop
- Prolactin and oxytocin levels rise in response to touch, smell and sight of baby
- Baby begins spontaneous breast seeking behaviour
- Mothering behaviours initiated

Neonatal admission =  
Interruption of normal  
physiological  
responses which  
support long term  
milk production



# Overcoming challenges - THINK MOTHER

- Immature breast development
- Decreased exposure to prolactin, cortisol, and other hormones which occurs during a full-term pregnancy
- Mother and baby separated at birth
- Baby not able to feed
- Mother's anxiety over baby's condition
- Mother may be unwell
- Support to establish and maintain breastmilk supply
- Culture supporting mothers need for sleep and rest following birth
- Delayed lactogenesis 2

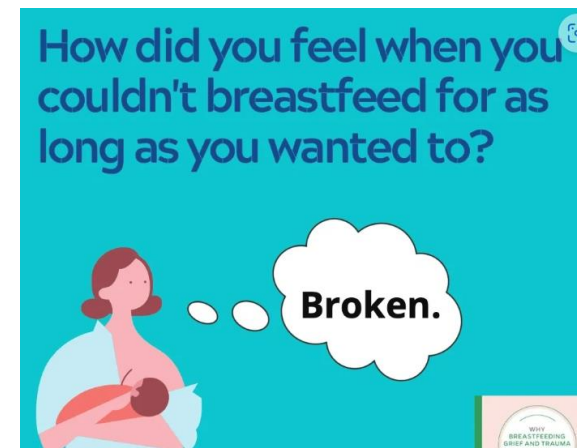




# Why early expression matters for mothers

■  
■

- Oxytocin responses from close contact/ expressing (love hormone)
  - Lowers blood pressure and improves sleep
  - Reduces stress levels by 'taking on' cortisol
  - Reduces pain sensitivity
  - Boosts mothers immune system
- Builds confidence - only mum can do it! Sense of achievement !
- Reduce chances of postnatal depression
- Breastfeeding grief (hopes and dreams)
  - Anger at not receiving support promised
  - Frustration at meeting difficulties (suggestions of formula)
  - Miserable that own feelings were dismissed
  - Feelings that body not working as hoped
  - Important because of cultural or religious beliefs
  - Friends and family experiences



# Delayed lactogenesis 2 – THINK MOTHER

- Caesarean Section (48% of NN admissions /17% unknown)
- Induction of labour / synthetic oxytocin (22% of NN admissions/ 8% unknown)
- Maternal obesity (27.4% NE/ Fingertips 18/19)
- Hormonal factors - Diabetes , hypothyroidism , PCOS,
- Post-partum haemorrhage
- Hypertension

# Other considerations – health inequalities:

\*MMBRACE / National Maternity and Perinatal Audit

- Babies born to Black women - higher rates of admission to NNU at term compared to babies born to women from all other ethnic groups.
- Babies born to women from South Asian ethnic groups have higher rates of term neonatal unit admission when compared to those born to white women.
- Women from South Asian and Black ethnic groups and those from the most deprived areas had higher rates of pre-existing hypertension and pre-pregnancy diabetes compared to women from white ethnic groups and those in the least deprived IMD's.
- Rates BMI of 30kg/m<sup>2</sup> or above are higher for women from Black ethnic groups compared to those from all other ethnic groups, and for those living in the most deprived areas.
- Black women have higher rates of caesarean birth, and more likely to experience a major PPH compared to white women.
- Rates of PPH higher for women in the least deprived areas

# Tobacco dependency

- Smoking tobacco causes a decline in breast milk volume, adverse alterations to the milk composition, and a shorter lactation period (Napierala et al., 2016).
- Estimated 20-25% of babies admitted to neonatal units are a result of the TDiP and infants have longer stays (Notley *et al*, 2022)
- NENC : 15% of admissions to NNU. mothers reported tobacco dependence at booking (12% unknown)
- Main modifiable risk factor for poor pregnancy outcomes and strongly correlated to high neonatal admissions and low birth weight (Nichols, Clarke & Notley, 2019).
- Indirect tertiary harms - family budget spent on parental tobacco addiction (Khan, 2022) Extra cost result from travel, food, accommodation and needing to pay for childcare for older children (Bliss, 2022) – Formula milk added future cost
- Long term exposure – increased incidence lower respiratory tract infection, asthma, otitis media, SIDS (protective factors correlated to breastmilk)

# Establishing mother and infant breastfeeding dyads

- Skin to skin contact at birth if possible (delivery room cuddles)
- Hand Express within 2 hours of birth (collaboration to facilitate between maternity and neonatal)
- Express at least 8 times (preferably 8-10) in 24 hours, including at night
- Combine hand and pump as volumes increase
- Good, consistent, frequent, relevant support - get additional help if needed
- Plans / expression assessments



# Start early - Aim high!



**But how high???**

**Mother and infant are in it together !**

**Depends on early support**

**THINK MOTHER**

# References

- Bliss (2022) Financial Costs Facing Parents. Bliss: For babies born sick or premature. [Financial costs facing families | Bliss](#) (accessed: 15/04/2024)
- Brown.A (2019) *Why Breastfeeding Grief and Trauma Matter*. Pinter and Martin. London.
- Healthcare Quality and Improvement Partnership (2023) *MBRRACE-UK Perinatal Confidential Enquiry: A comparison of the care of Asian, Black and White women who have experienced a stillbirth or neonatal death*. Available at <https://www.npeu.ox.ac.uk/mbrance-uk/reports>
- Khan, J. (2022) The Khan Review: Making Smoking Obsolete. Office for Health and Disparities. [The Khan review Making smoking obsolete - GOV.UK](#) (Accessed 15/04/2024)
- Napierala.Marta , Jan Mazela, T. Allen Merritt, Ewa Florek,(2016) Tobacco smoking and breastfeeding: Effect on the lactation process, breast milk composition and infant development. A critical review, *Environmental Research*,321-338, [Tobacco smoking and breastfeeding: Effect on the lactation process, breast milk composition and infant development. A critical review – ScienceDirect](#) (Accessed 15/04/2024)
- Nichols, A, Clarke, P & Notley, C 2019, 'Parental smoking and support in the NICU', *Archives of Disease in Childhood: Fetal & Neonatal Edition*, vol. 104, no. 3, F342. <https://doi.org/10.1136/archdischild-2018-316413> (Accessed 12 April 2024)
- Notley, C. Brown, T. Bauld, L. Boyle, E. Clarke, P. Hardeman, W. Holland, R. Hubbard, M. Naughton, F. Nichols, A. Orton, S. Ussher, M. and Ward, E. (2022) Development of a Smokefree Home Intervention For Families of Babies Admitted to Neonatal Intensive Care. *International Journal of Environmental Research and Public Health* 19 (6):3670 [Development of a Smoke-Free Home Intervention for Families of Babies Admitted to Neonatal Intensive Care - PMC](#) (Accessed: 15/04/2024)
- Webster K, NMPA Project Team. (2021) Ethnic and Socio-economic Inequalities in NHS Maternity and Perinatal Care for Women and their Babies: Assessing care using data from births between 1 April 2015 and 31 March 2018 across England, Scotland and Wales. London: RCOG;





# **Audit on Time From Birth to First Maternal Breastmilk in Preterm Infants <32 Weeks**

**Babies admitted to James Cook University Hospital Neonatal Unit from 01/03/2023 - 31/07/2023**

Please refer to the separate PDF document

**Dr Chloe Allen (Paediatric Registrar)**

# Failure is not an option

Julia Wood  
MatNeoSIP Lead



@NatPatSIP / @MatNeoSIP

[www.improvement.nhs.uk](http://www.improvement.nhs.uk)

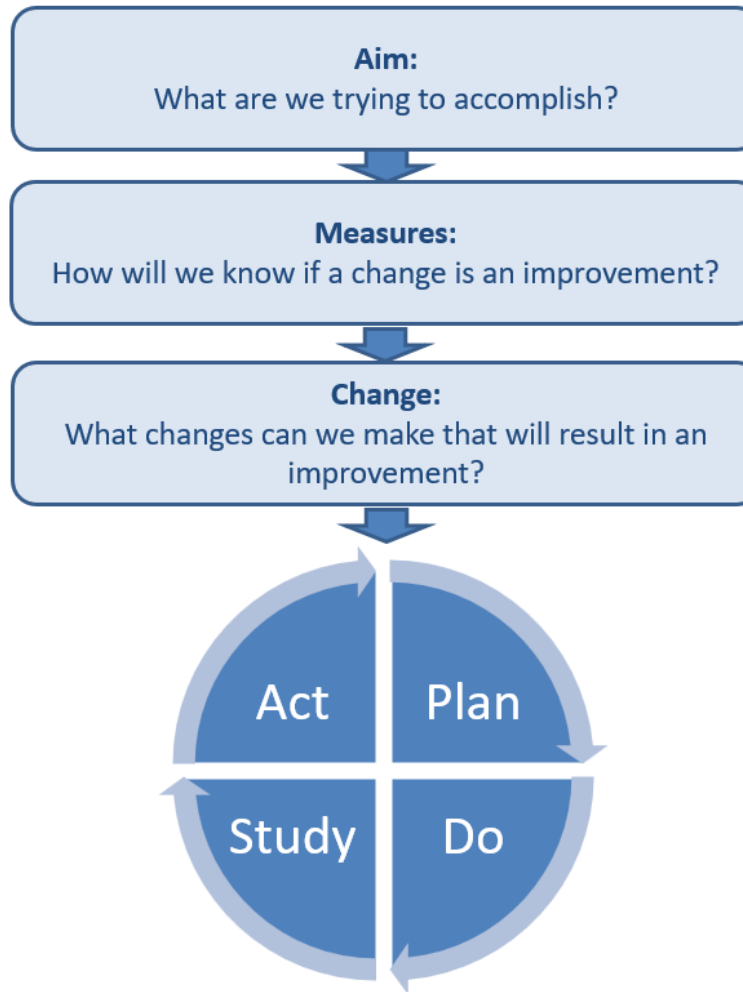
Led by:

**NHS England**

**NHS Improvement**

# The Model for Improvement

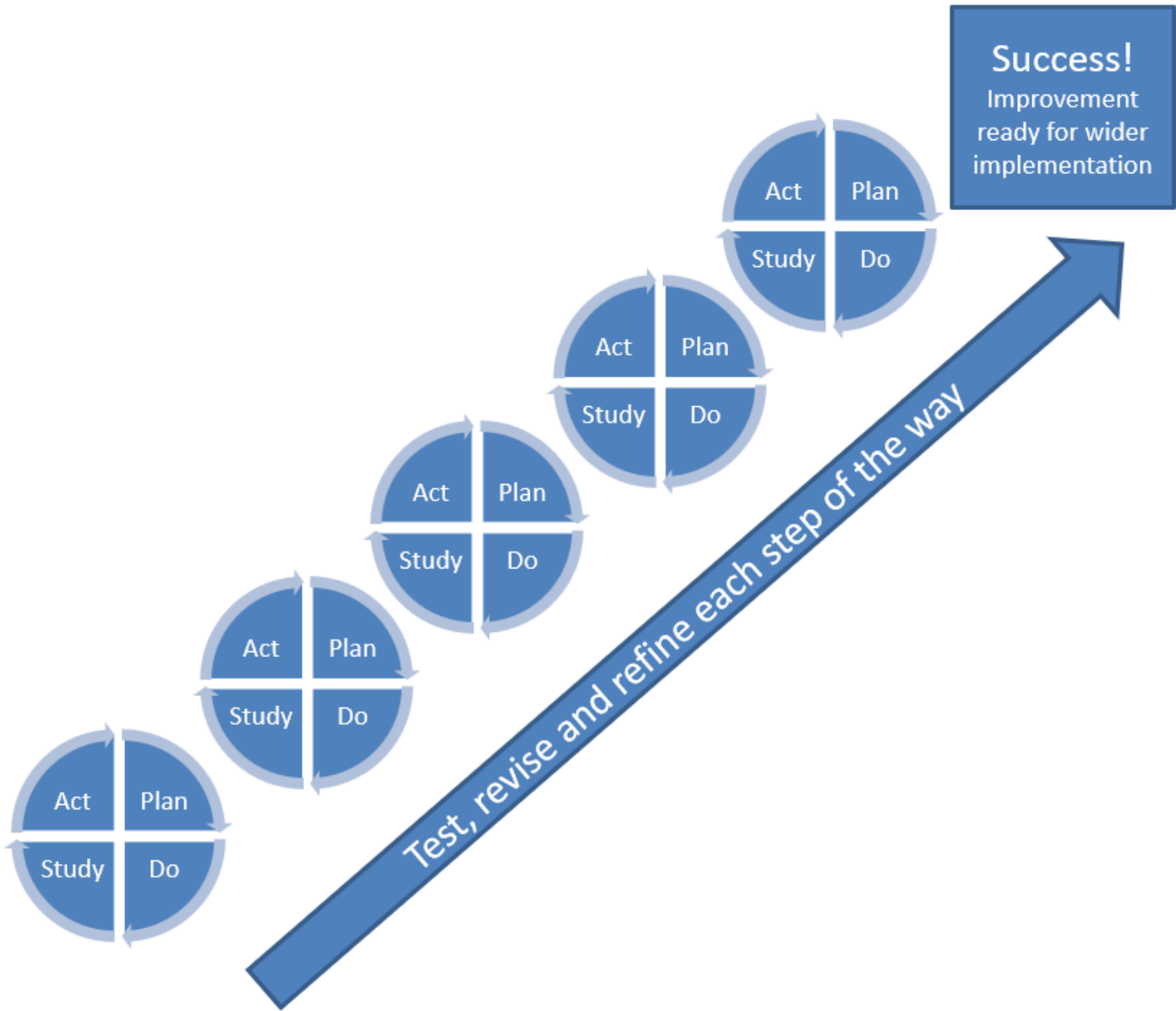
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**Aim:**  
What are we trying to accomplish?

**Measures:**  
How will we know if a change is an improvement?

**Change:**  
What changes can we make that will result in an improvement?



# Most people just plan and do!

## Plan and Do

- Large steps
- Abrupt, volatile
- Few champions
- Often need to rebuild
- Large investment in time
- Costs!



## Plan, Do, Study, Act

- Continuous and incremental
- Learn along the way
- Undramatic
- Often group efforts – champions
- Low investment



# Example

## Three fundamental questions



- **Aim (what are we trying to accomplish):**
  - My aim is to lose a stone in weight in 7 weeks starting w/c X and ending X
- **Measures (how will we know that a change is an improvement):**
  - Using weighing scales weigh myself each week on a Monday to track progress
  - Target 2lb per week
- **Changes (what changes can we make that will/may result in an improvement):**
  - Join gym (and go to it!)
  - Cycle to work
  - Get off the bus one stop earlier
  - Take the stairs
  - Join a slimming club
  - Cut out sweets, chocolate, crisps, cakes
  - Cut out bread, potatoes and chips

# Testing out the model for improvement



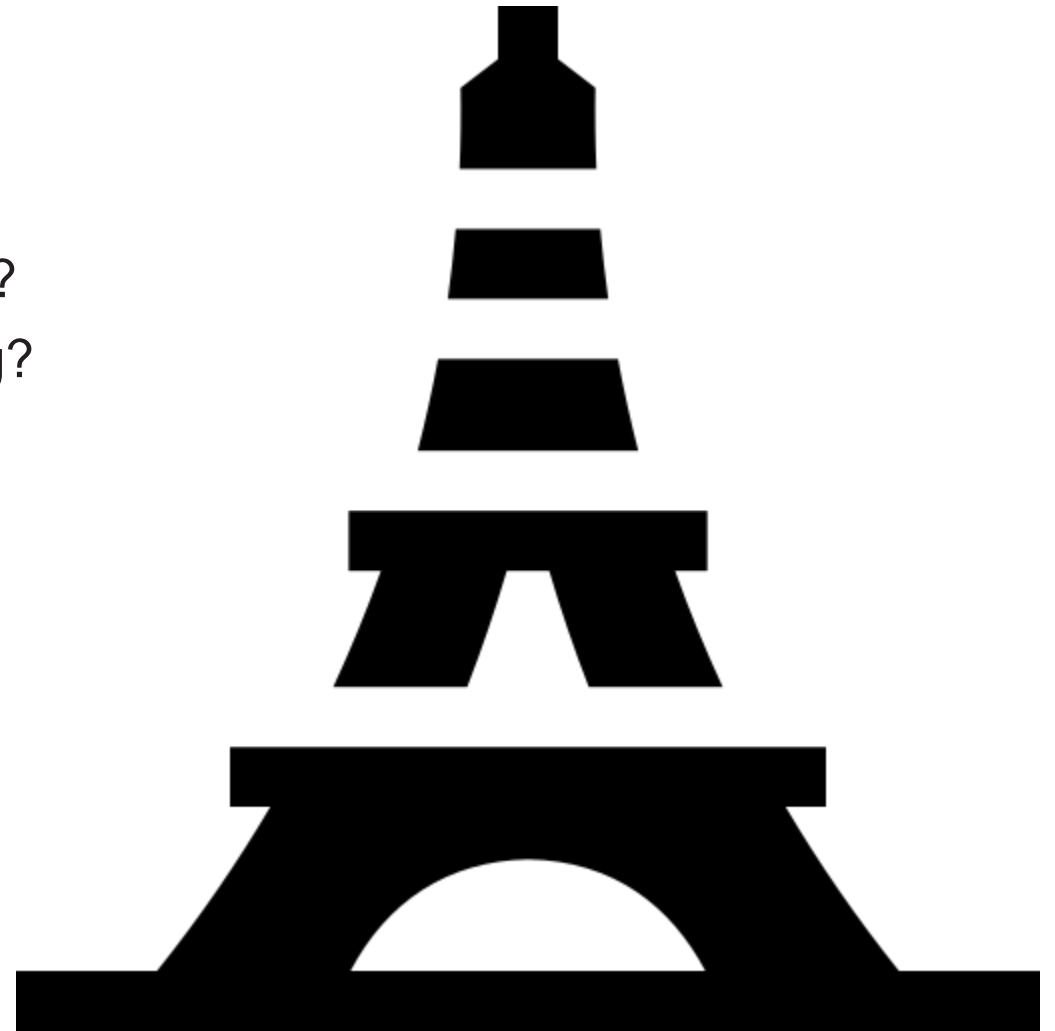
- > Build a spaghetti and marshmallow tower
- > Aim: To make the highest free-standing tower possible which stays stable until after the judging

- > Resources:
- > Lots of spaghetti
- > Bag of marshmallows



## What did you learn?

- > Did you keep refining until you reached your aim?
- > Did you go and see what other teams were doing?
- > How did you work together as a team?
- > Sometimes in the NHS failure is not an option...







The logo for EBMQIP, featuring the text 'EBMQIP' in white on a blue, textured, brushstroke-like background.

EBMQIP



# A beginners pack to improvement in EBM

Dr Aless Glover Williams



# Agenda

**What is EBMQIP?**

**What have we offered?**

**What have we learnt?**



EBMQIP



## Our Aim

TO **INCREASE** THE PROPORTION OF INFANTS **<34 WEEKS** GESTATION WHO RECEIVE THEIR **MOTHER'S BREAST MILK** **WITHIN 6 HOURS** OF LIFE, AND AS A CONSEQUENCE, TO IMPROVE THE PACKAGE OF **BONDING CARE** FOR FAMILIES THAT TAKES PLACE SURROUNDING THIS

## How?

**QUALITY IMPROVEMENT**  
METHODOLOGY  
**PPI CO-PRODUCTION**  
**NATIONAL COLLABORATION**  
**SHARING** EXCELLENCE  
**MEASURING** PROGRESS  
**CHAMPIONING** TRAINEE POTENTIAL  
EQUALITY, DIVERSITY & INCLUSION  
(EDI)  
ALWAYS **LISTENING**, ALWAYS  
LEARNING

## Outcome Measures

% INFANTS <34 WEEKS RECEIVING THEIR MOTHER'S MILK WITHIN 6 HOURS

% INFANTS RECEIVING THEIR MOTHER'S MILK WITHIN 24 HRS

## Process Measures

SKIN TO SKIN WITHIN 6 HOURS  
SKIN TO SKIN WITHIN 24 HOURS  
EXPRESSION WITHIN 6 HOURS OF BIRTH

## Who?

### TRAINEE LED

CONTACTS:

[ALESSANDRA.GLOVER1@NHS.NET](mailto:ALESSANDRA.GLOVER1@NHS.NET)

[EMMA.ALEXANDER5@NHS.NET](mailto:EMMA.ALEXANDER5@NHS.NET)

[CHANTELLE.TOMLINSON@NUH.NET](mailto:CHANTELLE.TOMLINSON@NUH.NET)

(CONSULTANT SUPERVISOR)

YOUR LOCAL LEAD IS:

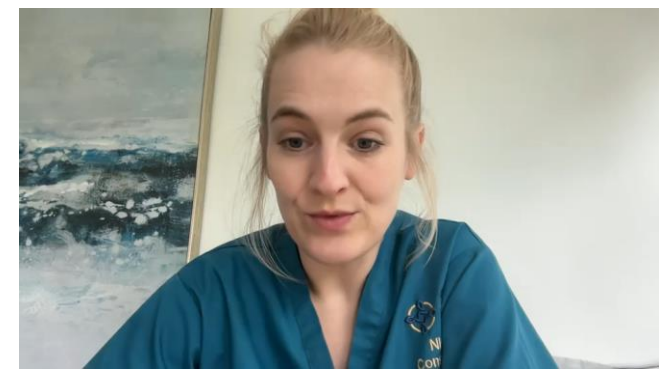


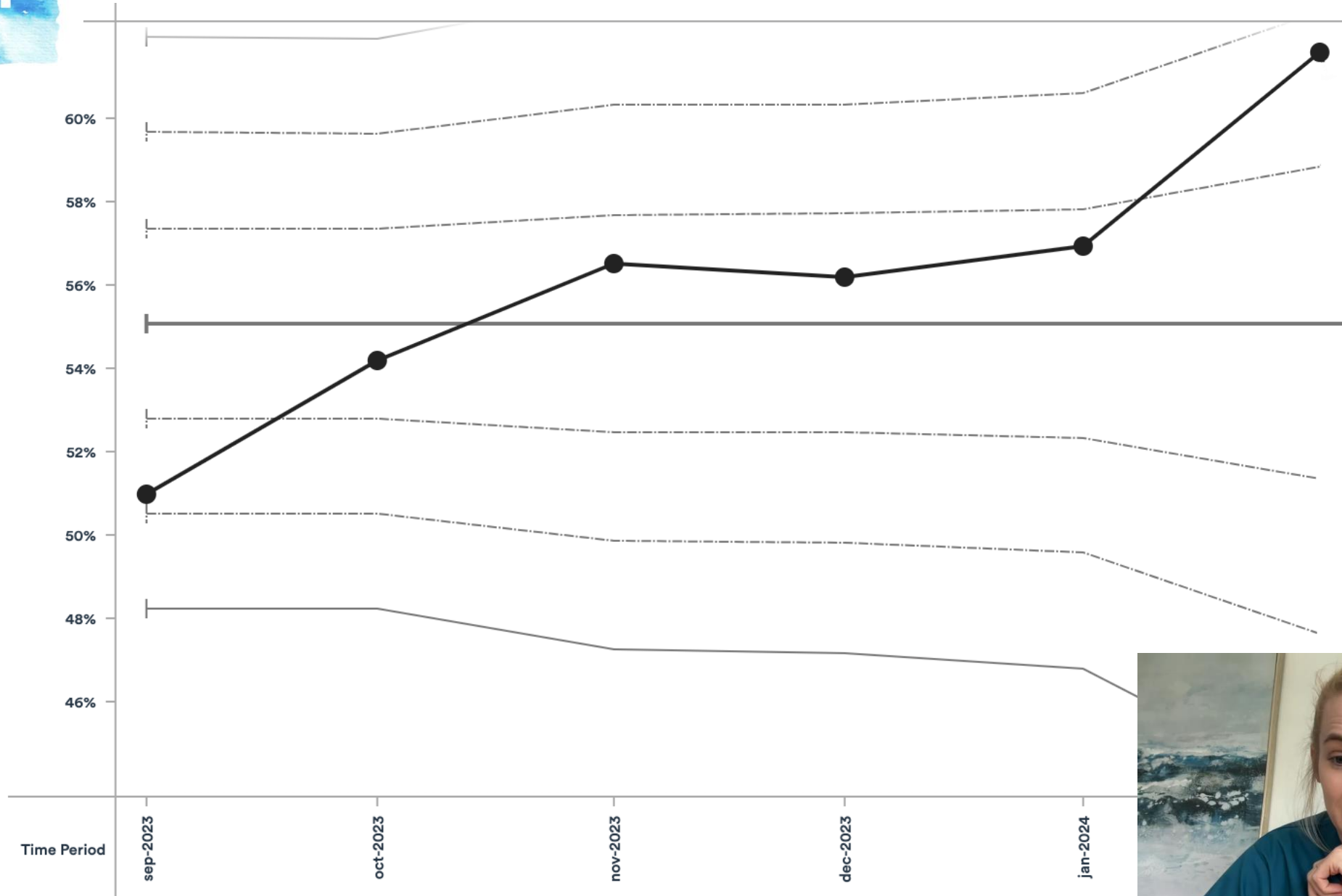


EBMQIP



**LifeQI**  
**Menu of change ideas**  
**QI Support**  
**Collaboration**  
**Resources**





# What have we learnt?

Everyone needs to be onboard, be inclusive

Movers and shakers

Evidence & credibility

Brand it

Localise it

Don't reinvent the wheel, collaborate

Listen, listen, listen & communicate







## Optimising Early Maternal Breast Milk for Preterm Infants

A Quality Improvement Toolkit  
November 2020

in collaboration with **NNAP**  
National Neonatal Audit Programme

# EARLY MATERNAL BREAST MILK

## THE EVIDENCE BEHIND THE INTERVENTIONS



**Skin-to-skin** increases milk volumes  
Hurst et al 1997

Receiving Breast milk instead of formula **reduces risk of NEC** by two thirds  
Quigley et al 2014

Oropharyngeal colostrum **reduces ventilator associated pneumonia** (odds decreased by 60%)  
Ma et al 2020

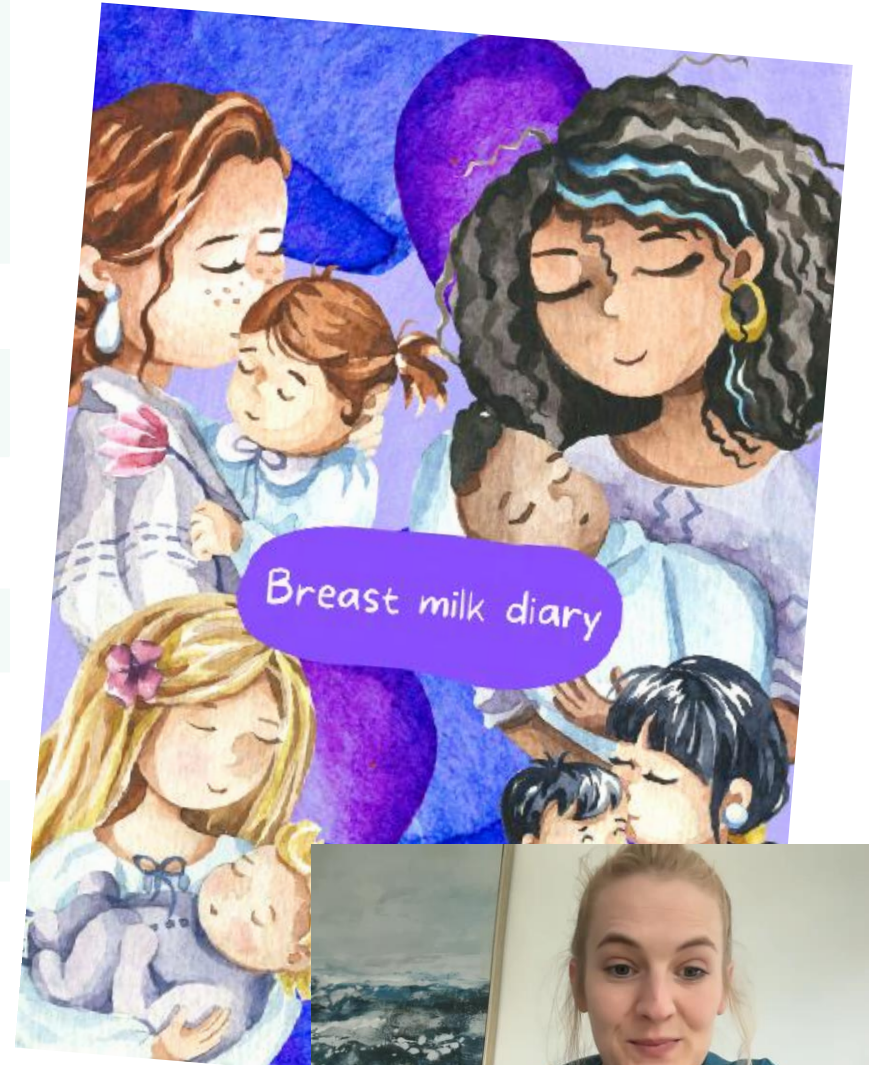
Breast milk instead of any formula **protects against ROP** (Odds decreased by 70%)  
Zhou et al 2015

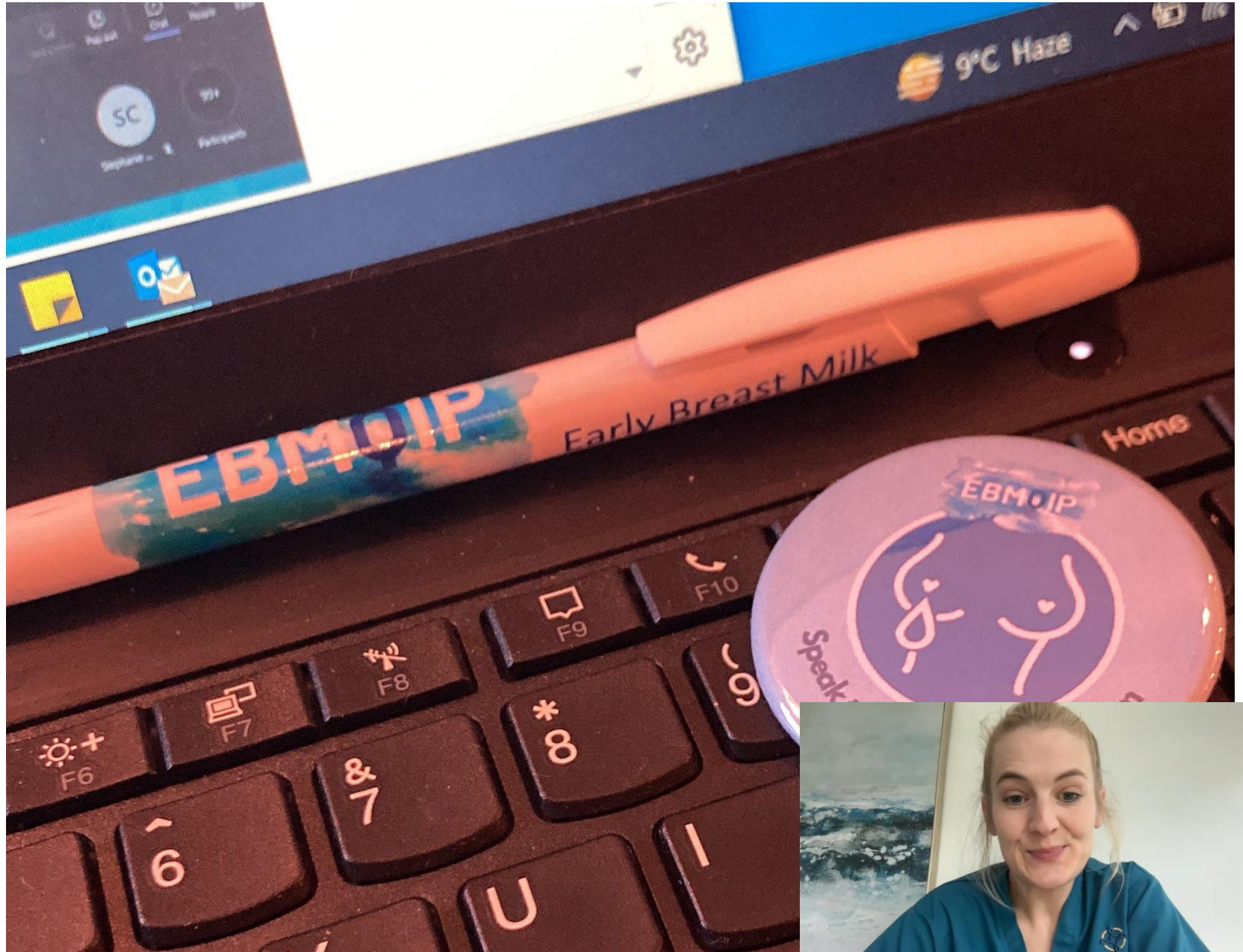


Expressed breast milk volumes are significantly more if pumping is started **within 1hr of birth**  
Parker et al 2012

**Pumping 5-8 times** a day improves expressed volumes  
Furman et al 2002  
Hill et al 2005

Breast milk **improves IQ** by at least 5.9 points  
Kramer et al 2008





# Congratulations on your baby's birth



Oxford University Hospitals  
NHS Foundation Trust



How to hand  
express:



[youtu.be/K0zVCwdJZw](https://youtu.be/K0zVCwdJZw)

At this time your baby needs to be cared for in the Newborn Care Unit – we know that's hard.

We encourage you and your support person to be with your baby as soon as you are able, any time of day or night. We will help you have skin to skin contact as soon as possible and for as long as possible.

Try to express colostrum (the concentrated first milk your body makes) as soon as you can – if you do this within two hours of birth it can kick start your milk supply. Colostrum is like a medicine for sick babies. Your midwife will help you.

## More information on expressing colostrum (the concentrated first milk your body makes):



Oxford University Hospitals  
NHS Foundation Trust

We recommend that you express using your hands ("hand expressing") and with an electric pump. The pump gives good stimulation to your breasts even if nothing comes out (which is common!)



Your midwife or maternity support worker will help you with how to express and give you the equipment – please ask for more help if you need it.



Starting to express does not mean you have to continue for a long time or breastfeed your baby later on if that isn't what you planned.

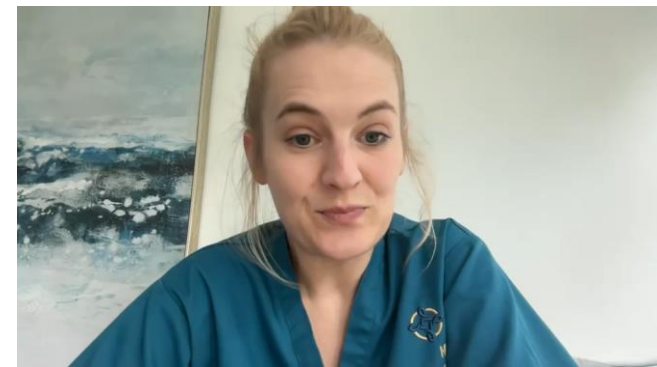
Keep trying to express frequently, aiming for 8-10 times in 24 hours, including at least once in the night. This gives you the best chance of bringing your milk in and establishing your milk supply.



Don't worry if you are getting no colostrum, or tiny amounts. This is normal. Just keep going! Any colostrum that you express to the Newborn Care Unit as soon as you can so it can be given to your baby/babies.



# Sustainability and Embedding



EBMOIP



# Questions?



# EARLY COLOSTRUM

Kristina Chmelova

Maria Douglass

Stefan Zalewski

Janet Berrington

The background features a large, stylized graphic composed of multiple overlapping, semi-transparent curved bands. The left side of the graphic is dominated by shades of blue, transitioning from a light sky blue to a deeper cerulean. The right side is dominated by shades of green, transitioning from a pale sage green to a vibrant emerald green. The bands are layered to create a sense of depth and movement, curving around the central text.

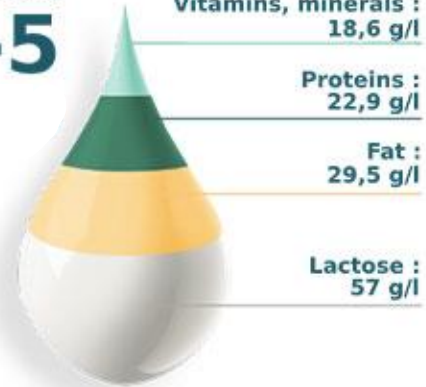
# COLOSTRUM QIP

Motivation

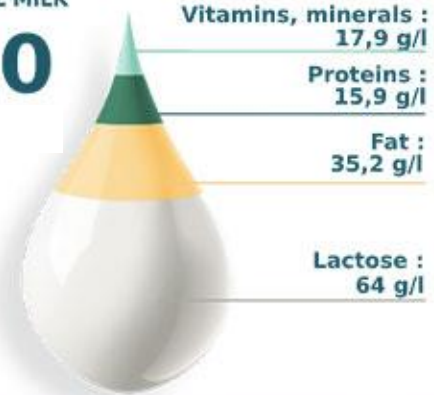
Our journey

# Types of breastmilk

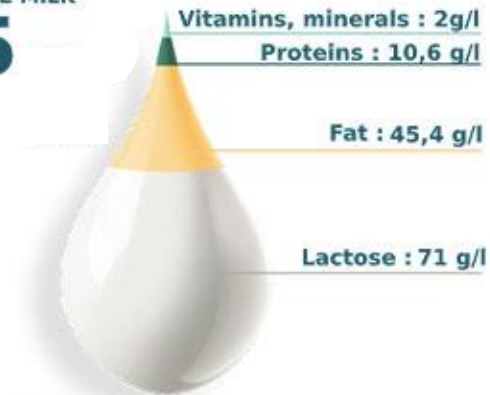
COLOSTRUM  
**1-5**



TRANSITIONAL MILK  
**6-10**



MATURE MILK  
**15**

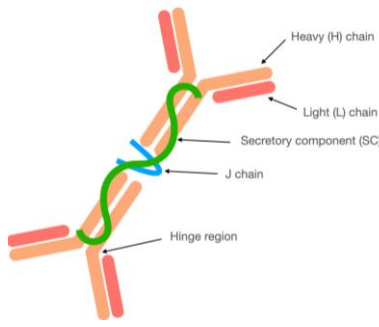


Committee on Nutrition American Academy of Pediatrics. 1993. Pediatric Nutrition Handbook (3rd edition). Elk Grove Village, Illinois, USA : Lippincott Williams & Wilkins, MD.

## EVOLUTION OF THE COMPOSITION OF BREAST MILK OVER TIME







What is it exactly?



Lymphocyte



Neutrophil

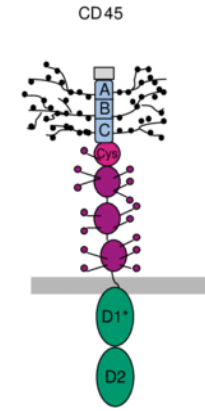
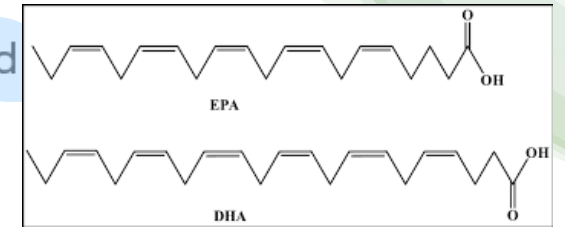
Anti-microbial compounds  
 Immunoglobulins: sIgA, SIgG, SIgM  
 Lactoferrin, lactoferricin B and H  
 Lysozyme  
 Lactoperoxidase  
 Nucleotide-hydrolyzing antibodies  
 $\kappa$ -Casein and  $\alpha$ -lactalbumin  
 Haptocorrin  
 Mucins  
 Lactadherin  
 Free secretory component  
 Oligosaccharides and pre-biotics  
 Fatty acids  
 Maternal leukocytes and cytokines  
 sCD14  
 Complement and complement receptors  
 $\beta$ -Defensin-1  
 Toll-like receptors  
 Bifidus factor

Tolerance/priming compounds  
 Cytokines: IL-10 and TGF $\beta$   
 Anti-idiotypic antibodies

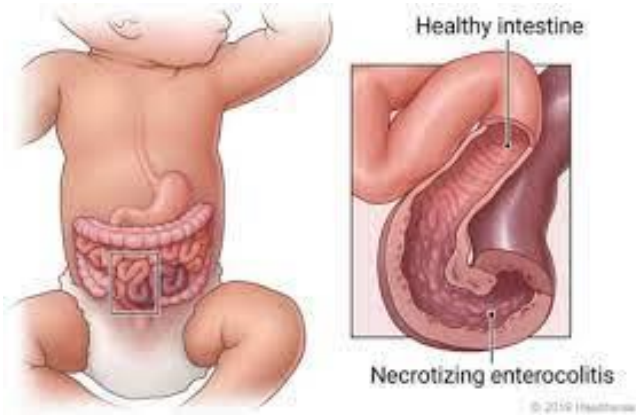
Immune development compounds  
 Macrophages  
 Neutrophils  
 Lymphocytes  
 Cytokines  
 Growth factors  
 Hormones  
 Milk peptides  
 Long-chain polyunsaturated fatty acids  
 Nucleotides  
 Adhesion molecules

Anti-inflammatory compounds  
 Cytokines: IL-10 and TGF $\beta$   
 IL-1 receptor antagonist  
 TNF $\alpha$  and IL-6 receptors  
 sCD14  
 Adhesion molecules  
 Long-chain polyunsaturated fatty acids  
 Hormones and growth factors  
 Osteoprotegerin  
 Lactoferrin  
 Long-chain polyunsaturated fatty acids  
 Hormones and growth factors  
 fatty acids

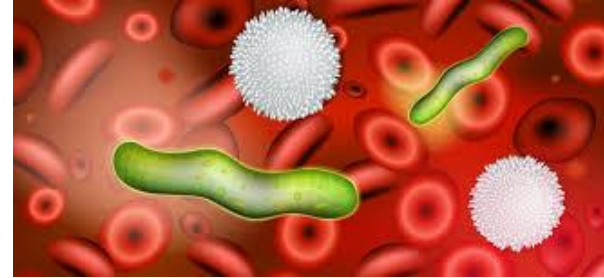
29 <b>Cu</b> [Ar]3d <sup>10</sup> 4s copper	63.546	30 <b>Zn</b> [Ar]3d <sup>10</sup> 4s <sup>2</sup> zinc	65.38
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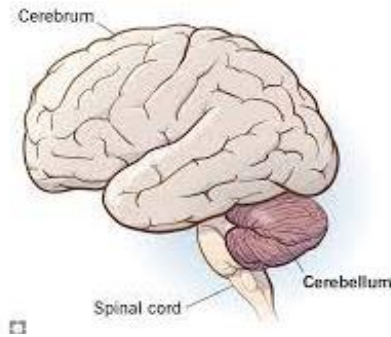
# What does it mean?



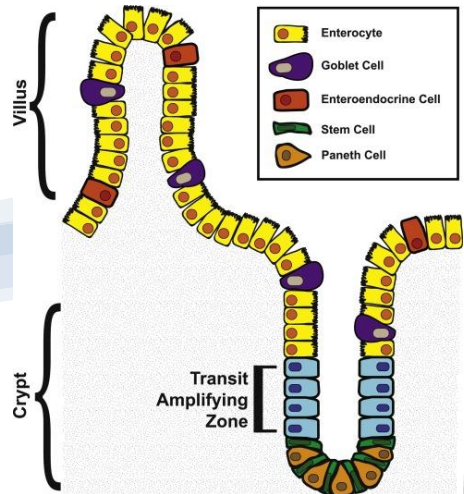
Protection against infection and inflammation



Promotes tissue growth



Facilitates intestinal maturation



Laxative



# Early matters

Physiological – effect of the golden hour



What if separated?



# Why early?

More  
milk

Expressing within 1 hour =  
**613** ml/d at week 3 of life

Expressing within 6 hours =  
**267** ml/d at week 3 of life

Parker et al, *J.Perinatol.* 2012

More  
breast-  
feeding at  
discharge

**35% vs 62%**

Parker et al, *The FASEB  
Journal* 2017

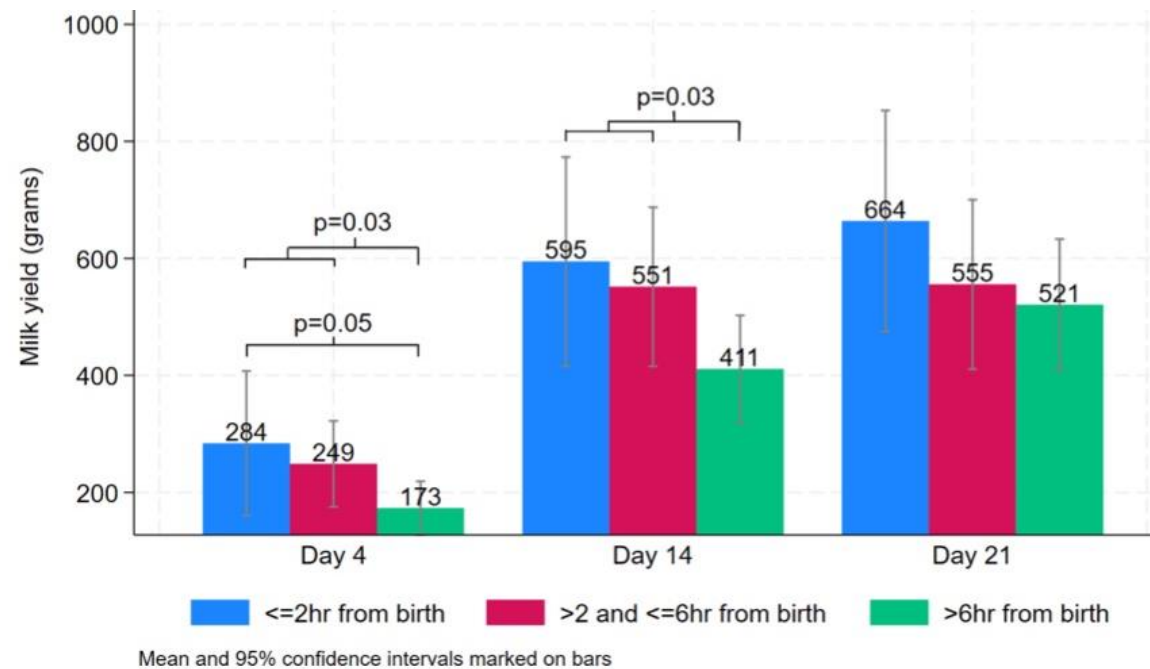
Better  
maternal  
physical  
and mental  
health

Safe for  
ALL  
babies

Snyder et al,  
*Pediatr Neonatol.* 2017

# Does extremely early expression of colostrum after very preterm birth improve mother's own milk quantity? A cohort study

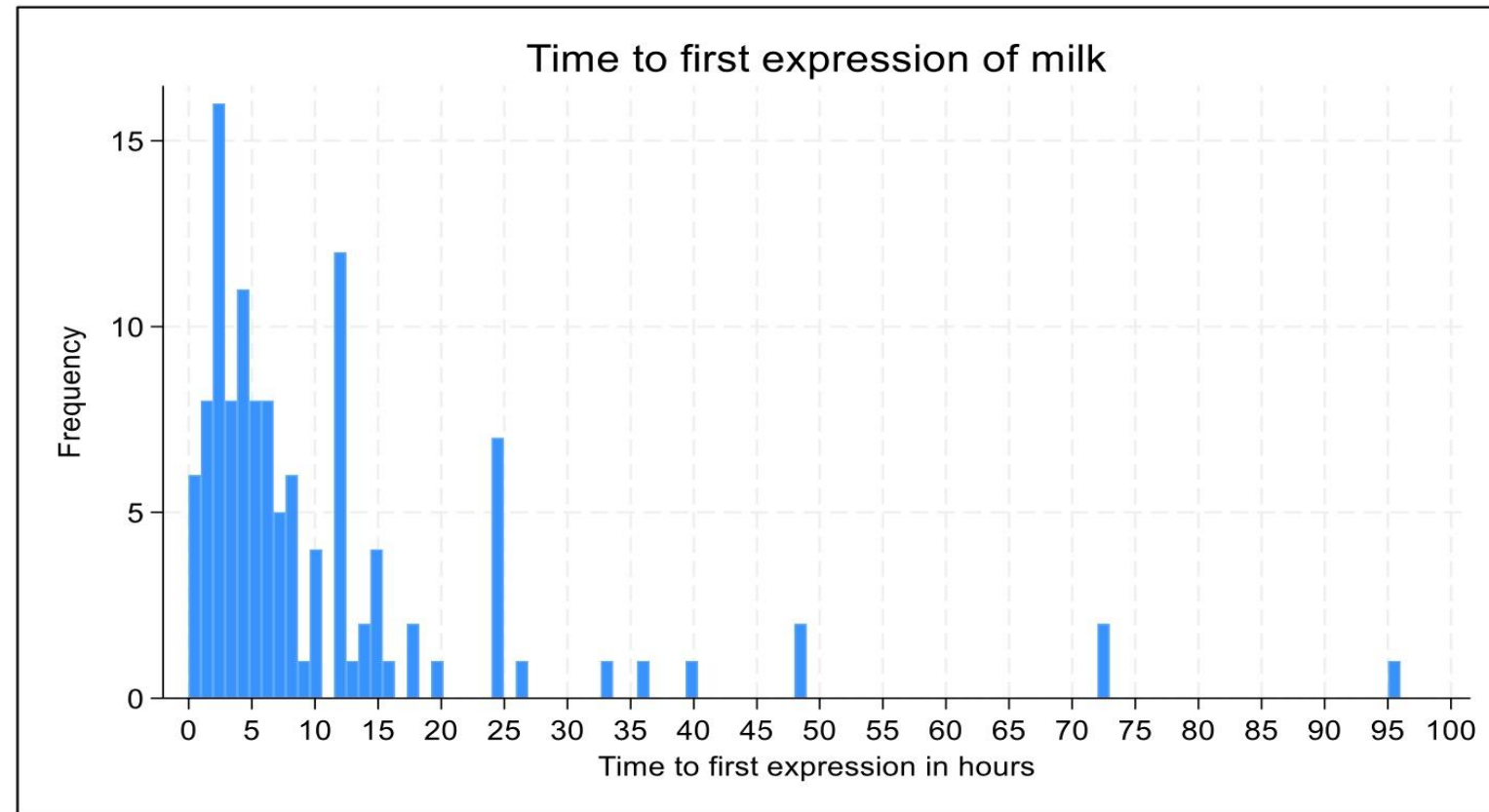
Ilana Levene <sup>1</sup>, Maria A Quigley,<sup>1</sup> Mary Fewtrell,<sup>2</sup> Frances O'Brien <sup>3</sup>



**Figure 1** Expressed milk yield on days 4, 14 and 21 by time to first expression after birth.

# Does extremely early expression of colostrum after very preterm birth improve mother's own milk quantity? A cohort study

Ilana Levene <sup>1</sup>, Maria A Quigley,<sup>1</sup> Mary Fewtrell,<sup>2</sup> Frances O'Brien <sup>3</sup>



# Authorities

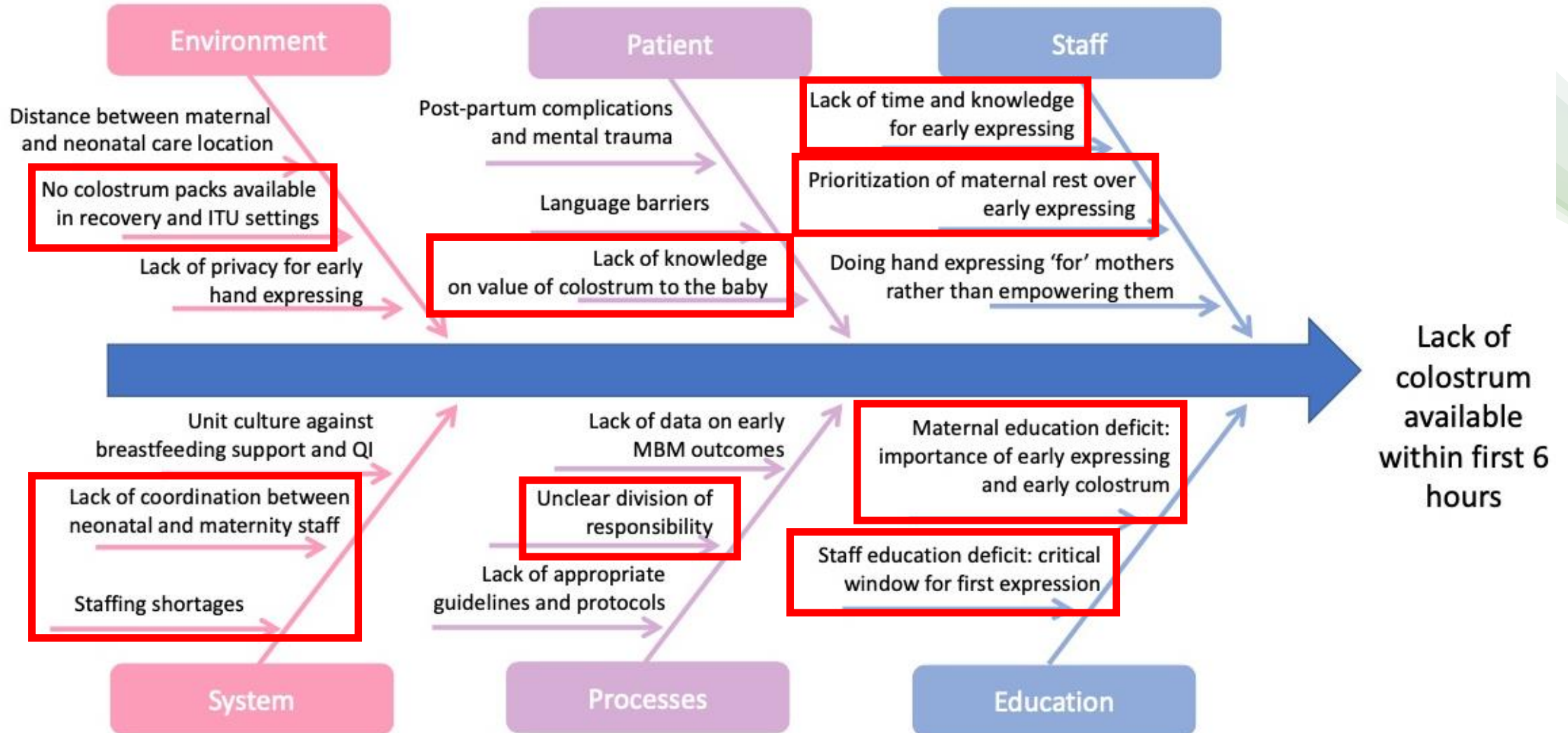
BAPM Toolkit



BFI Standards



# Phase 1 – Do I want to know?





# Phase 1 – Do I want to know?

Audit Jan 2021

## Late administration & poor documentation

<b>Colostrum characteristics</b>	<b>Hours from delivery Median (IQR)</b>
Mum first shown how to express	10.5 (6.0 – 17.4)
Mum first hand - expressed	10.5 (6.9 – 17.4)
First colostrum at hand expressing	<b>26.0 (17.4 – 45.9)</b>
First colostrum administration	-

## Phase 2 - A shared purpose

**QIP team** - monthly meetings

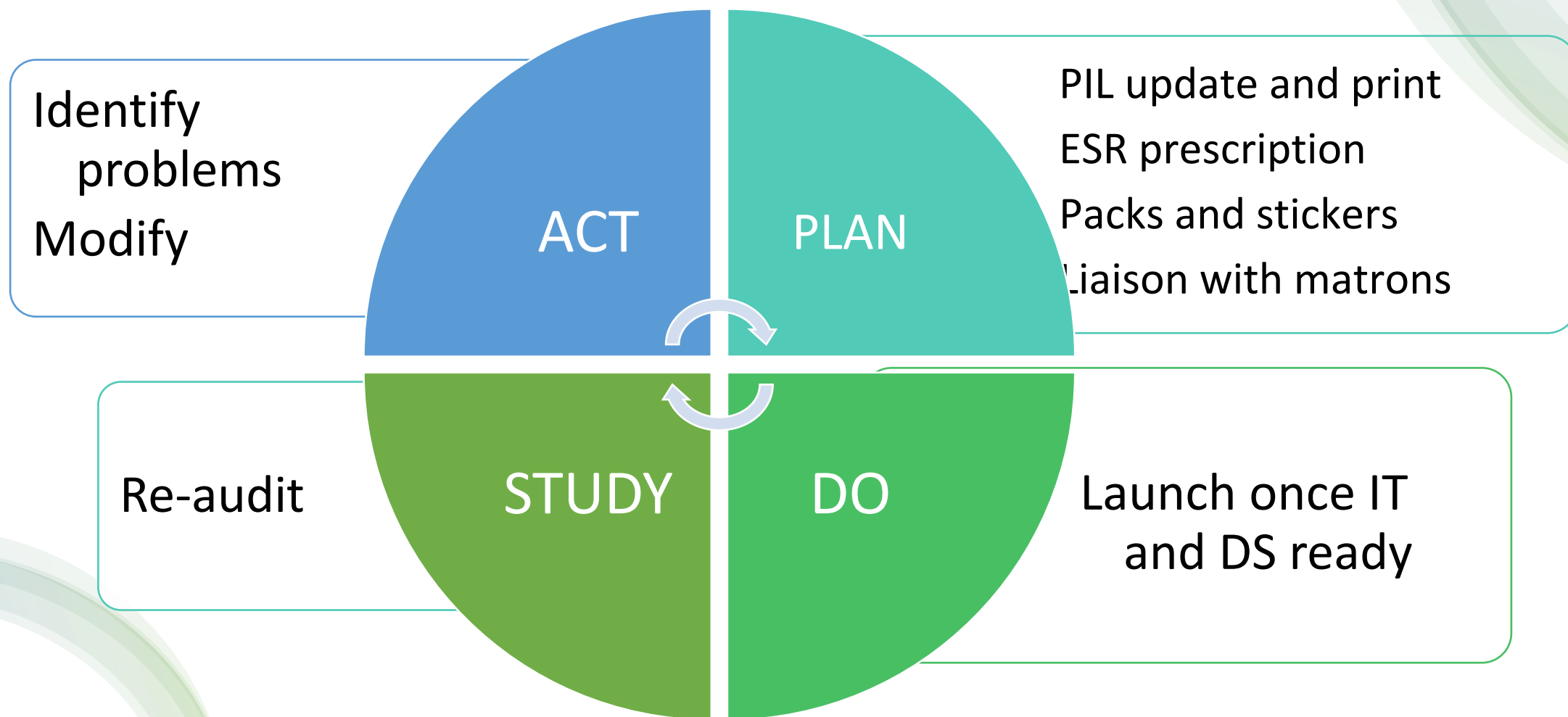
Barriers and facilitators

Teaming up with DS

1. Education
2. Colostrum packs and updated PIL
3. Prescription



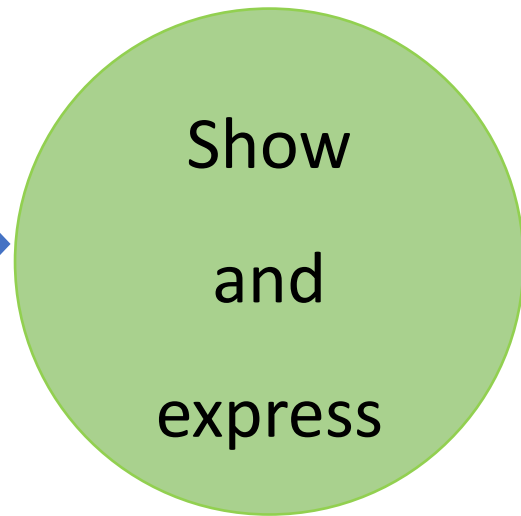
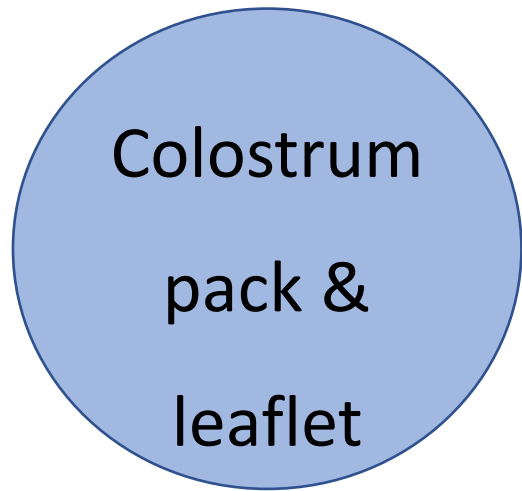
## Phase 3 - Planning and implementation



COUNSELLING before birth where possible, ASAP after if not

'DO'

As soon as expressed



Expect minimal amounts

**DO NOT** refrigerate

## NEWCASTLE HOSPITALS NEONATAL UNIT

## PROVIDING COLOSTRUM FOR YOUR BABY

## What is Colostrum?

Colostrum is the first milk your body makes. Acting 'like a medicine' it can help their immune system, gut and brain and protect from infection. It starts to work as soon as it is given. **Even very small, sick or early babies can have colostrum as soon as they are born.** We will show you how to express it. **Your colostrum is unique**, made by you especially for your baby's needs and expressing it can help you feel close to them. The earlier you express the sooner your baby can have colostrum and the more milk your body will make overall. **Ideally express within 2 hours after birth.** **At first you will produce very small amounts – every drop is precious and will help your baby.**



## How to express Colostrum

Being **close to your baby can help expressing** or look at a **photograph** or inhale their **scent**. Skin-to-skin contact will help – ask your nurse about this.

Scan the QR code: you will be taken to a video showing you how to hand express colostrum (watch from 31 seconds)

Hand Expressing Video



Credit: Unicef UK Baby Friendly Initiative Hand expression - YouTube

## How to express Colostrum – Step by Step Guide

- Gently massage the breast and stimulate the nipple.
- Have the little purple syringe to hand.
- Make a C shape with your hand and place your thumb and forefinger 2-3 cm behind your nipple.
- Gently squeeze and release. Press back while doing this if you can and try not to slide your fingers along the breast. Compress and release – it shouldn't hurt.
- Repeat and build up a rhythm. A few drops may appear – if not re position your fingers and do it again – it often it takes a little while.
- Drops will appear and this will increase over time. Once this stops, rotate your fingers around the breast so that every part of the breast is expressed.
- Do both breasts each time.
- LABEL the syringe and buzz the midwife and ask them to take the milk to Neonatal unit, if your baby is there, or help you give it if you have your baby with you
- Aim to hand express colostrum 8-10 times in 24 hours.
- Even if you get nothing or the tiniest drop please continue to massage and express every 2-3 hours – it will come.



© American Dairy Science Association<sup>™</sup>, 2012.

## Effects of cooling and freezing storage on the stability of bioactive factors in human colostrum

**C. Ramírez-Santana,\*† F. J. Pérez-Cano,\* C. Audí,\* M. Castell,\* M. G. Moretones,‡ M. C. López-Sabater,†§  
C. Castellote,\*† and A. Franch\*†<sup>1</sup>**

\*Department of Physiology, Faculty of Pharmacy, University of Barcelona, Av. Joan XXIII s/n, 08028 Barcelona, Spain

†CIBER Epidemiología y Salud Pública (CIBERESP), C/ Dr. Aiguader, 88, 1a planta, 08003 Barcelona, Spain

‡Servei de Neonatologia, ICGON, Agrupació Sanitària Hospital Clínic-Hospital Sant Joan de Déu, Universitat de Barcelona, C. Sabino Arana, 1, 08028 Barcelona, Spain

§Department of Nutrition and Food Sciences, Faculty of Pharmacy, University of Barcelona, Av. Joan XXIII s/n, 08028 Barcelona, Spain

Cooling > Freezing > Thawing

Some immunocomponents are very labile  
(IgA, IL-10...)

# 'STUDY'

<b>Infant characteristics</b>	<b>Jan '21 - Feb '21</b>	<b>Nov '21- Feb '22</b>
Gestation, Median (IQR), (weeks)	30.6 (28.1 – 33.0)	30.9 (27.7 -32.7)
Birth weight, Median (IQR), (grams)	1495 ( 1135–1910)	1265 (765 – 1470)

<b>Colostrum characteristics</b>	<b>Hours from delivery Median (IQR)</b>	<b>Hours from delivery Median (IQR)</b>
Mum first shown how to express	10.5 (6.0 – 17.4)	4.5 (2.5 – 7.4)
Mum first hand - expressed	10.5 (6.9 – 17.4)	3.6 (2.1 – 6.3)
First colostrum at hand expressing	26.0 (17.4 – 45.9)	6.0 (2.9 – 23.8)
First colostrum administration	-	12.6 (4.8 – 41.5)

## First results vs. BAPM recommendations

1/8 mothers was shown & hand expressed within 2 hours after delivery

4/14 mothers were shown & hand expressed within 2 hours after delivery

0/8 mothers expressed colostrum within 6 hours

6 /14 mothers expressed colostrum within 6 hours

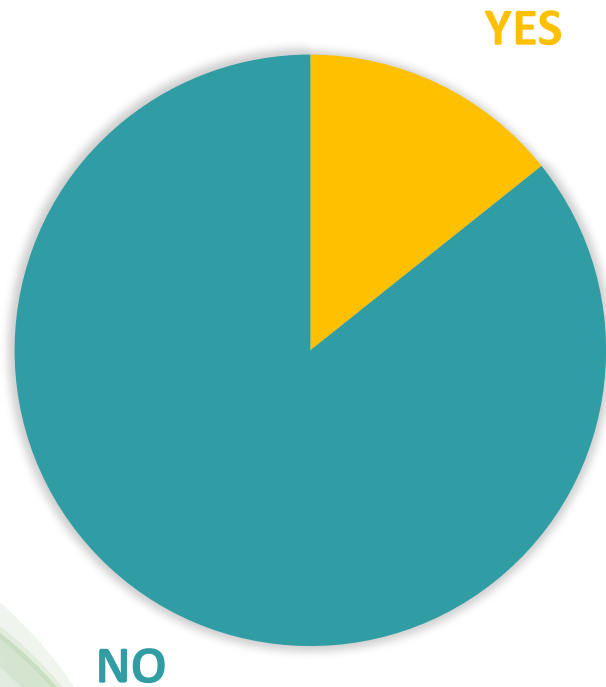
3/8 mothers expressed colostrum within 24 hours

11/14 mothers expressed colostrum within 24 hours

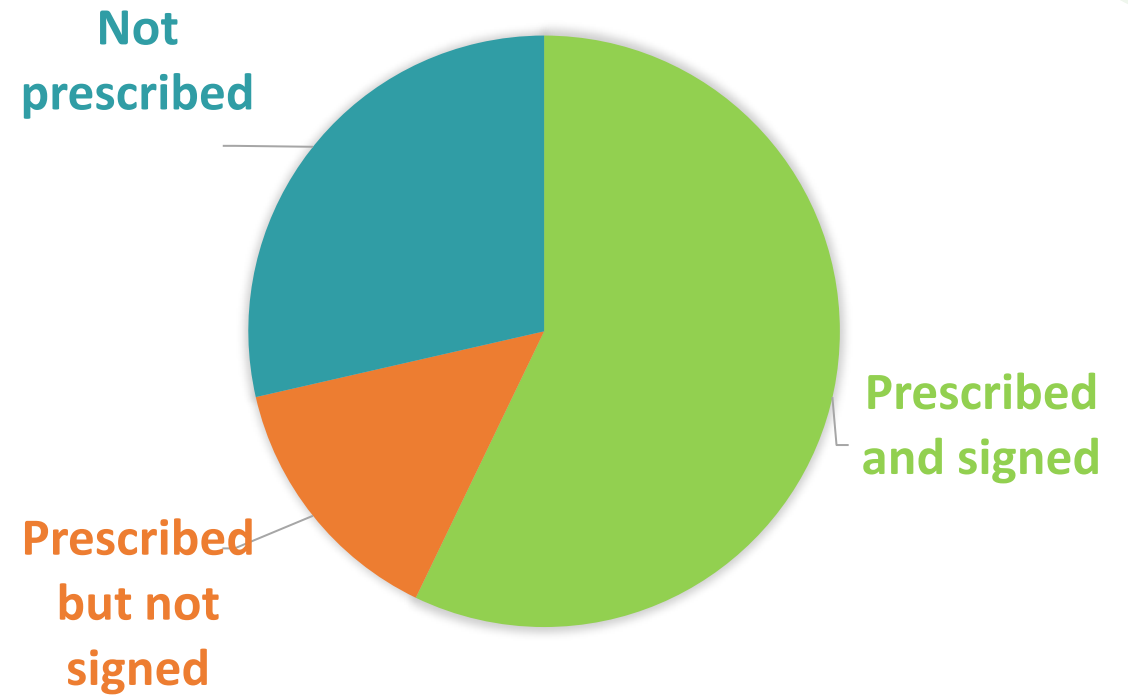


# 'STUDY' - process measures

## COLOSTRUM LABEL USE



## E-RECORD PRESCRIPTION



# 'ACT'

**Changes:** labels for baby notes

**Improvements:** more talks  
friends in Delivery Suite

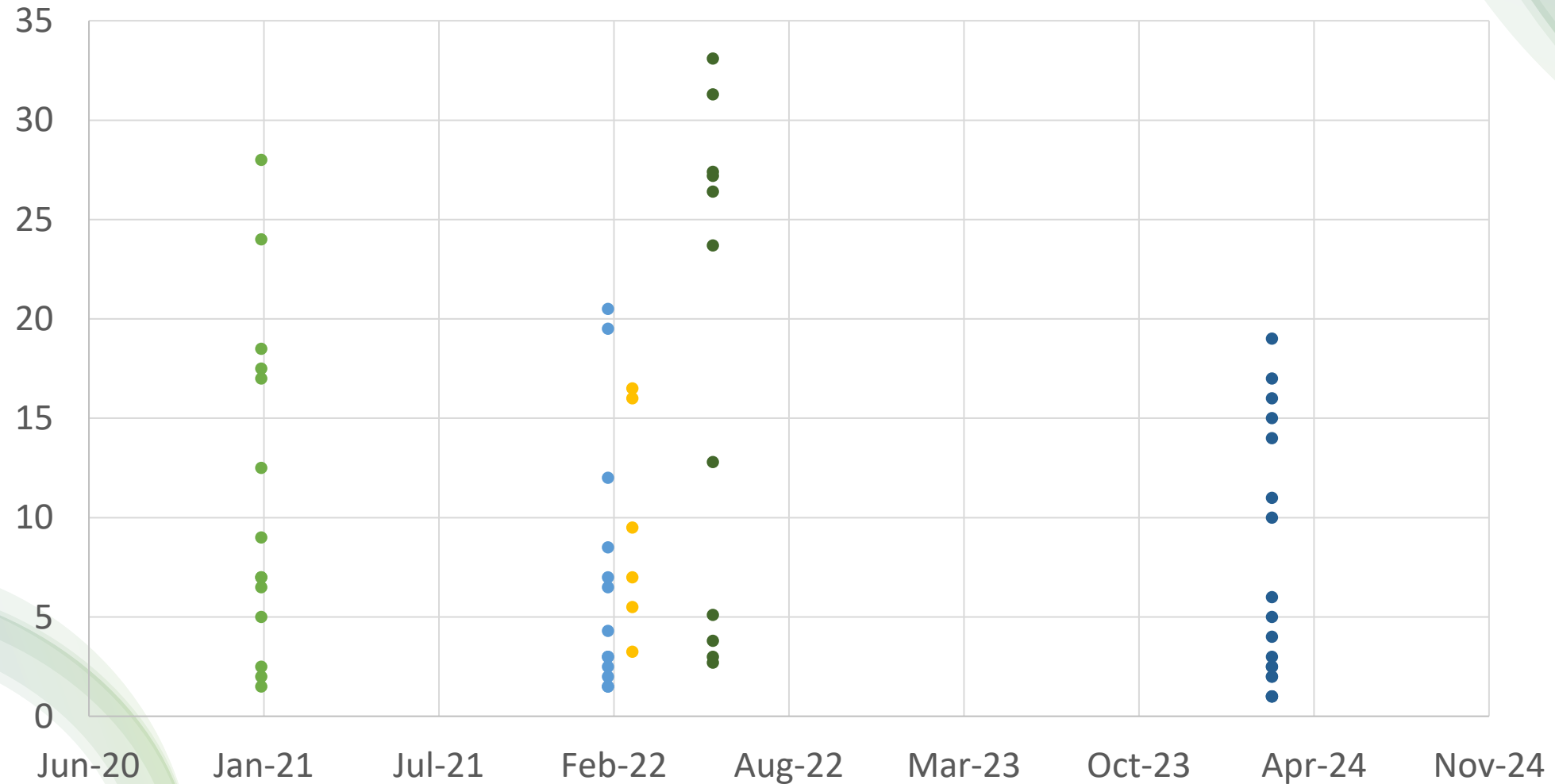
**Spread the packs:** antenatal ward, resuscitaires, transport bag



More packs!

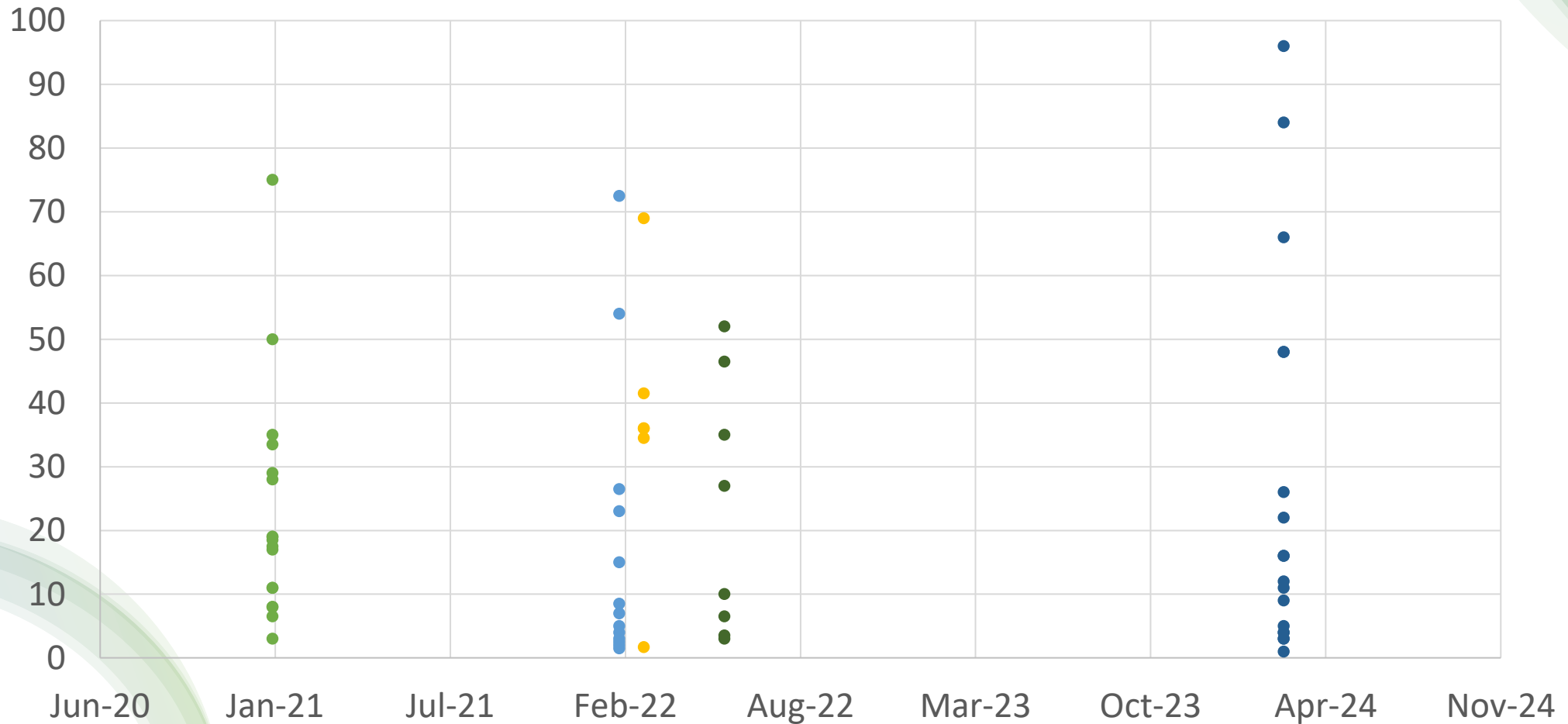
# Phase 4 – Test your improvements regularly

First hand expressing

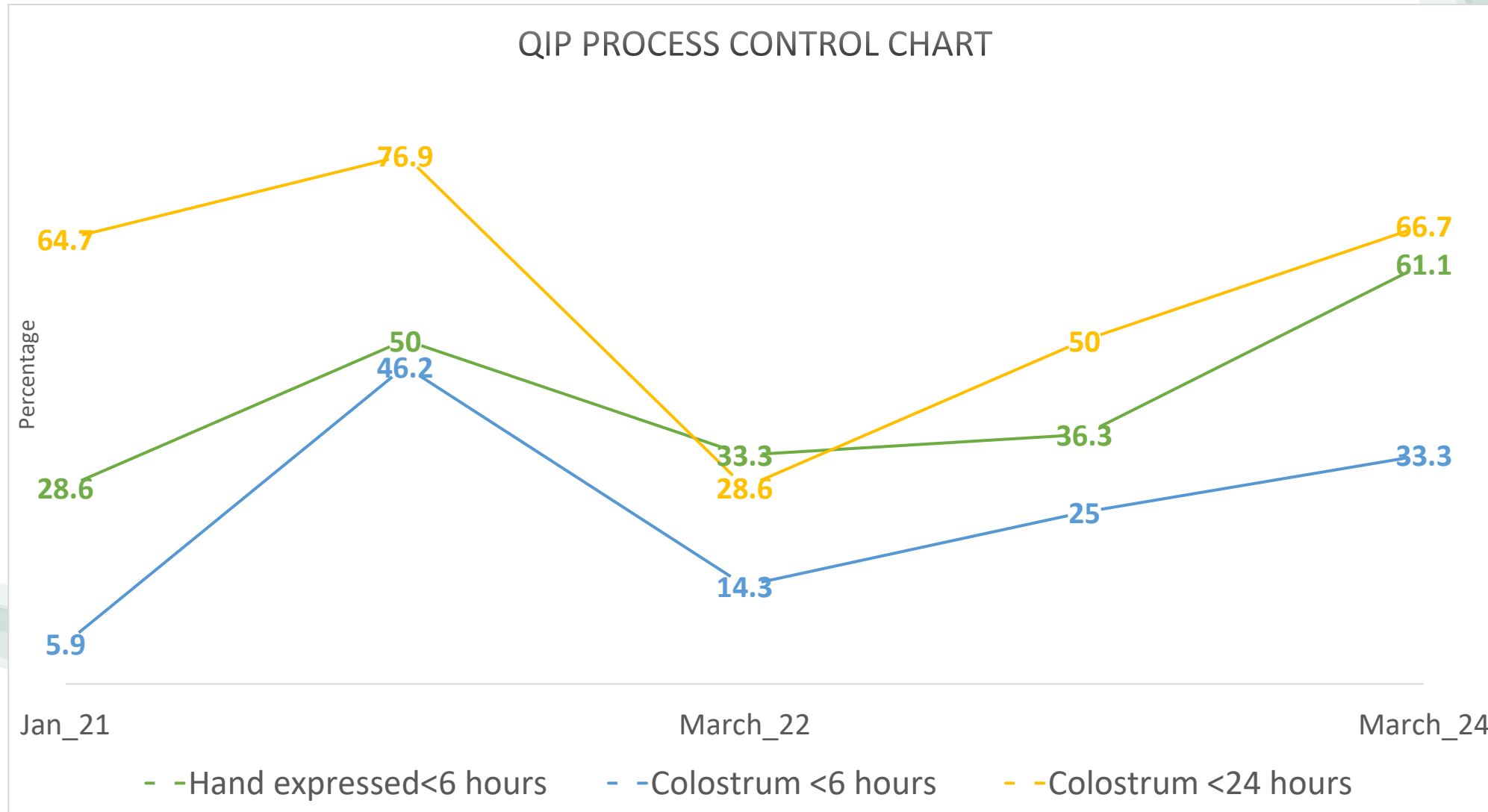


# Phase 4 – Test your improvements regularly

First colostrum administration

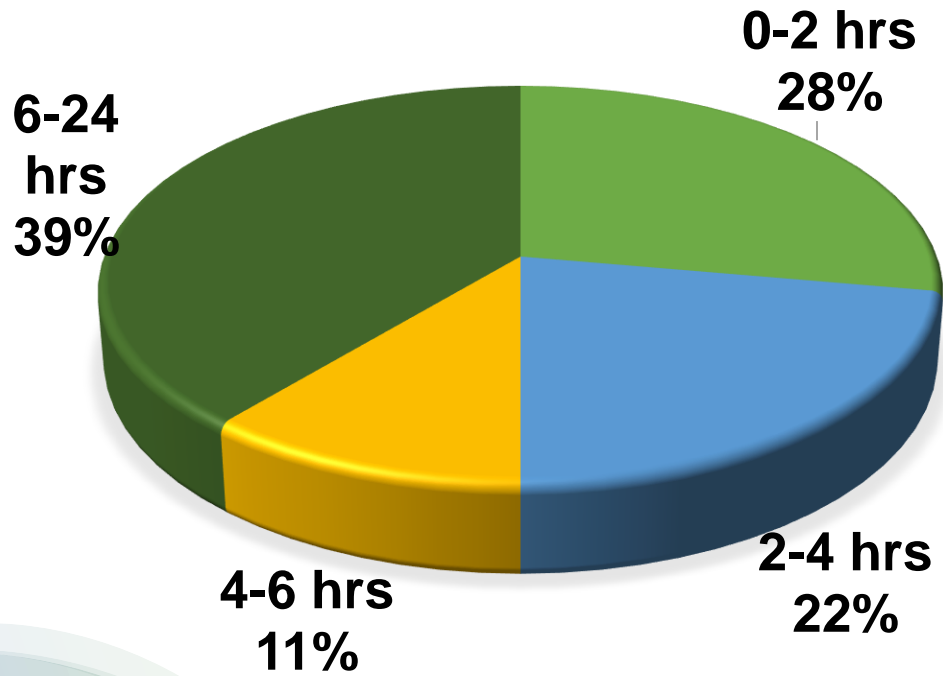


# Phase 4 – Test your improvements regularly

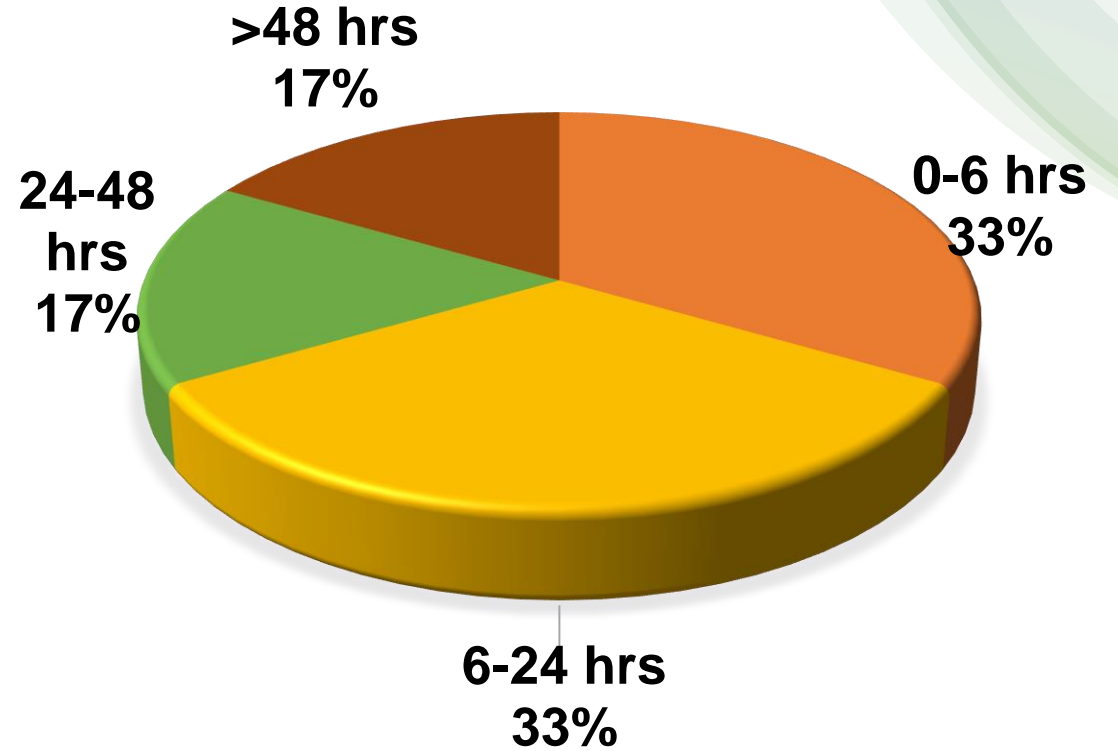


# Audit 2024

## TIME TO FIRST EXPRESSION



## TIME TO FIRST COLOSTRUM



# Audit 2024- issues to address

- Mums expressing but due to various reasons no colostrum obtained for several hours/days
- No indication of time colostrum was obtained
- Potential issue of delayed documentation as now using Badger rather than paper charts

# Sustainability

Re-audit

Ups and downs

Keep going





<https://www.nor-net.org.uk/files/pdf/nenc-preterm-birth-guideline-v6-19-sept-2023.pdf>

# Thank you!

[k.chmelova@nhs.net](mailto:k.chmelova@nhs.net)

[Maria.douglass@nhs.net](mailto:Maria.douglass@nhs.net)

@KristinaChmelo2



Maternity and  
Neonatal

# Force Field Analysis

Julia Wood  
MatNeoSIP Lead



@NatPatSIP / @MatNeoSIP

[www.improvement.nhs.uk](http://www.improvement.nhs.uk)

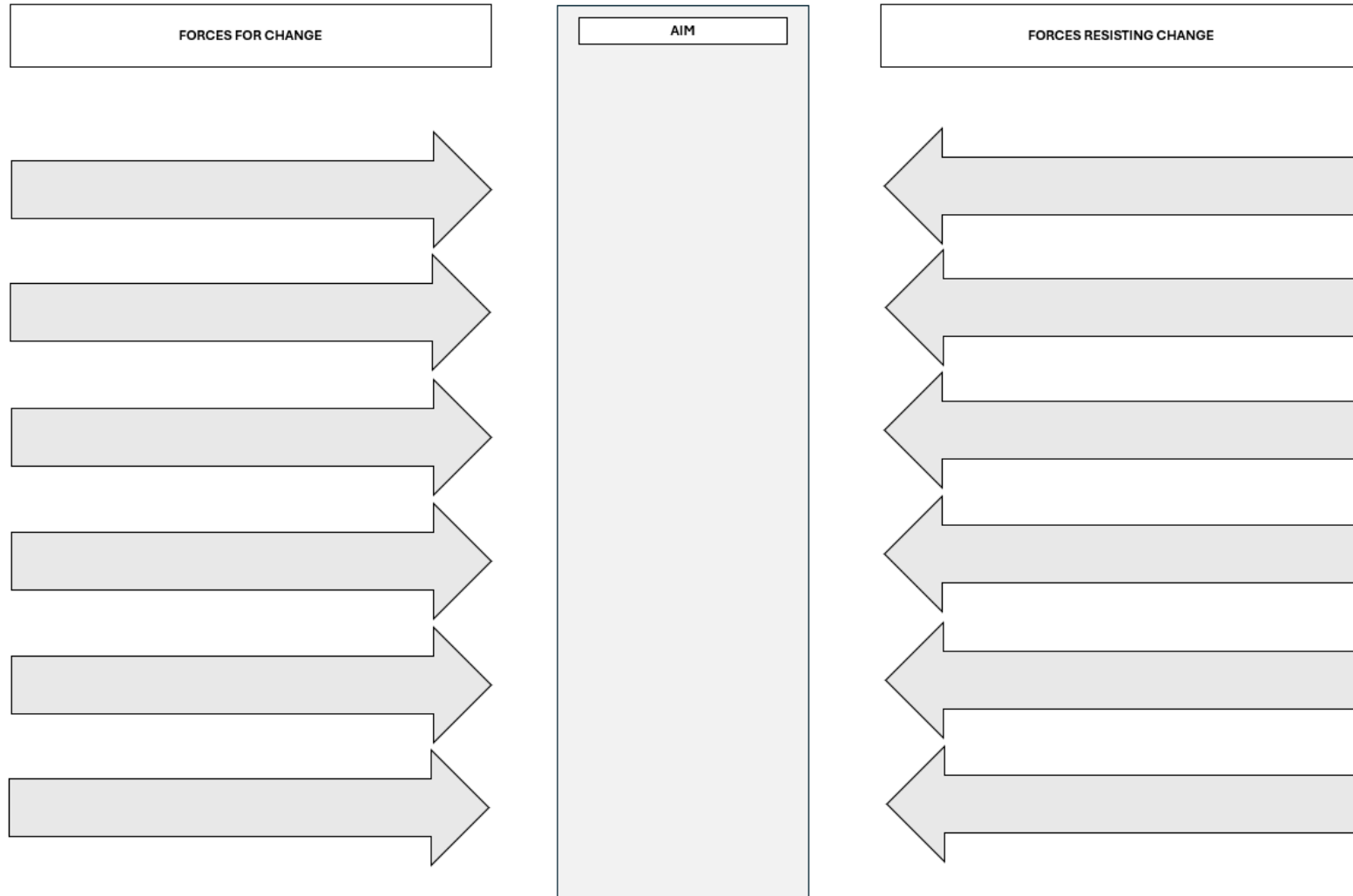
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Cumbria Patient Safety  
Collaborative**

Led by:

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NHS Improvement**



- > How can you capitalise on what is working well?
- > How can you overcome or reduce the impact of your restraining forces?

