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Maternity and Children Quality Improvement Collaborative (MCQIC) Neonatal Care Webinar

Preterm Perinatal Wellbeing Package: Successes, Challenges & Next Steps

19 May 2022

Welcome and introduction

Healthcare Improvement Scotland
EVERY PERSON EVERY TIME SCOTTISH PATIENT SAFETY PROGRAMME

Dr Lynsey Still (Chair)

MCQIC Neonatal Clinical Lead

Healthcare Improvement Scotland

Agenda

Time	Topic	Lead
10.00-10.05	Welcome and introductions	**Dr Lynsey Still (Chair)** MCQIC Neonatal Clinical Lead Healthcare Improvement Scotland
10.05-10.20	Overview	**Dr Lynsey Still (Chair)**
10.20-11.10	Perinatal Wellbeing Package in University Hospital Wishaw Maternal milk and temperature Deferred cord clamping B4 34 branded pathway Creating a perinatal team	**Dr Augusta Anenih** Consultant Neonatologist, NHS Lanarkshire **Dr Jennifer Hendry** ST2 Paediatric Care, NHS Lothian **Dr Gemma Edwards** ST6 Paediatric Trainee, NHS Greater Glasgow and Clyde **Dr Colin Peters** Consultant Neonatologist, Clinical Director for Neonatal Services, NHS Greater Glasgow and Clyde **Dr Kathleen Brown** Consultant Neonatologist, NHS Tayside
11.10-11.25	Panel-led Q&A	**Dr Lynsey Still (Chair)**
11.25-11.30	Next steps	**Dr Lynsey Still (Chair)**
11.30	Thank you and close	

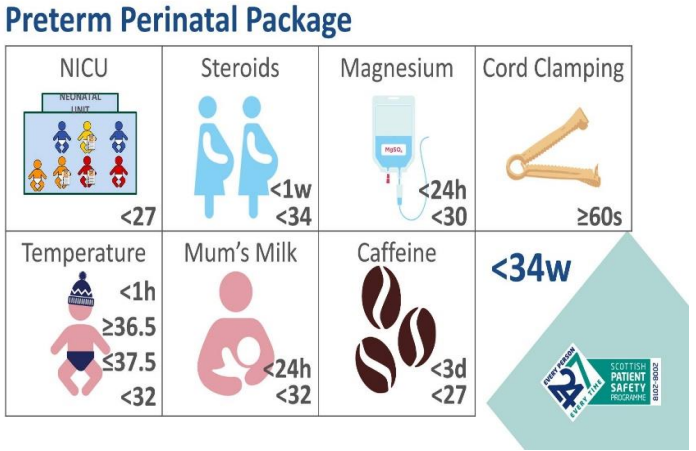
Aims of the webinar

- Highlight the importance of perinatal optimisation and standardisation of preterm care.
- Discuss successes and challenges of the wellbeing package.
- Agree next steps in further improving outcomes for our most vulnerable babies.

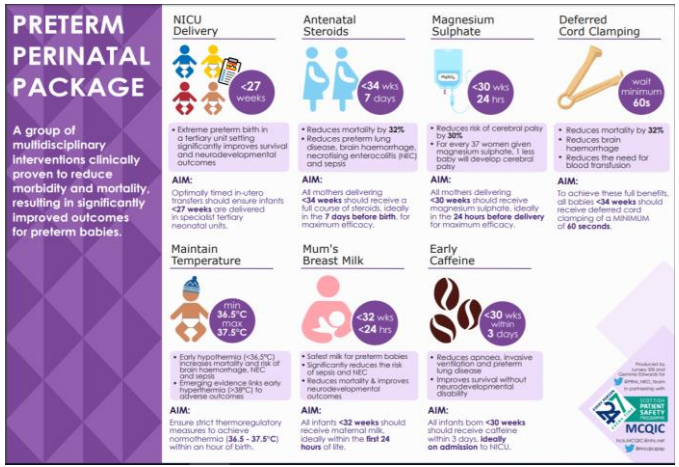
Background

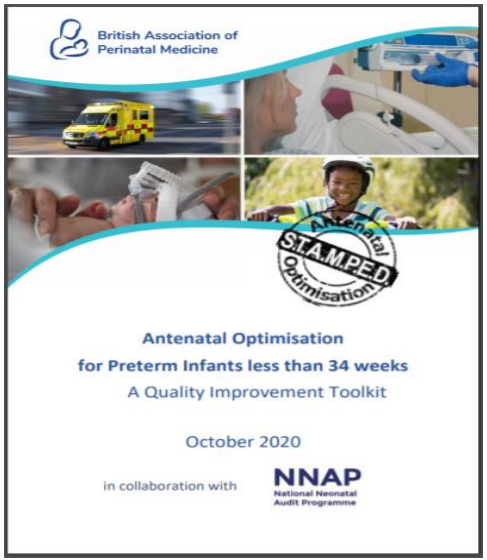
- Perinatal optimisation relates to the delivery of numerous evidence based antenatal, intrapartum and neonatal interventions that are vital in improving outcomes for preterm babies.

- Launch of MCQIC Perinatal Wellbeing Package (PPWP) in 2017.



Perinatal optimisation initiatives





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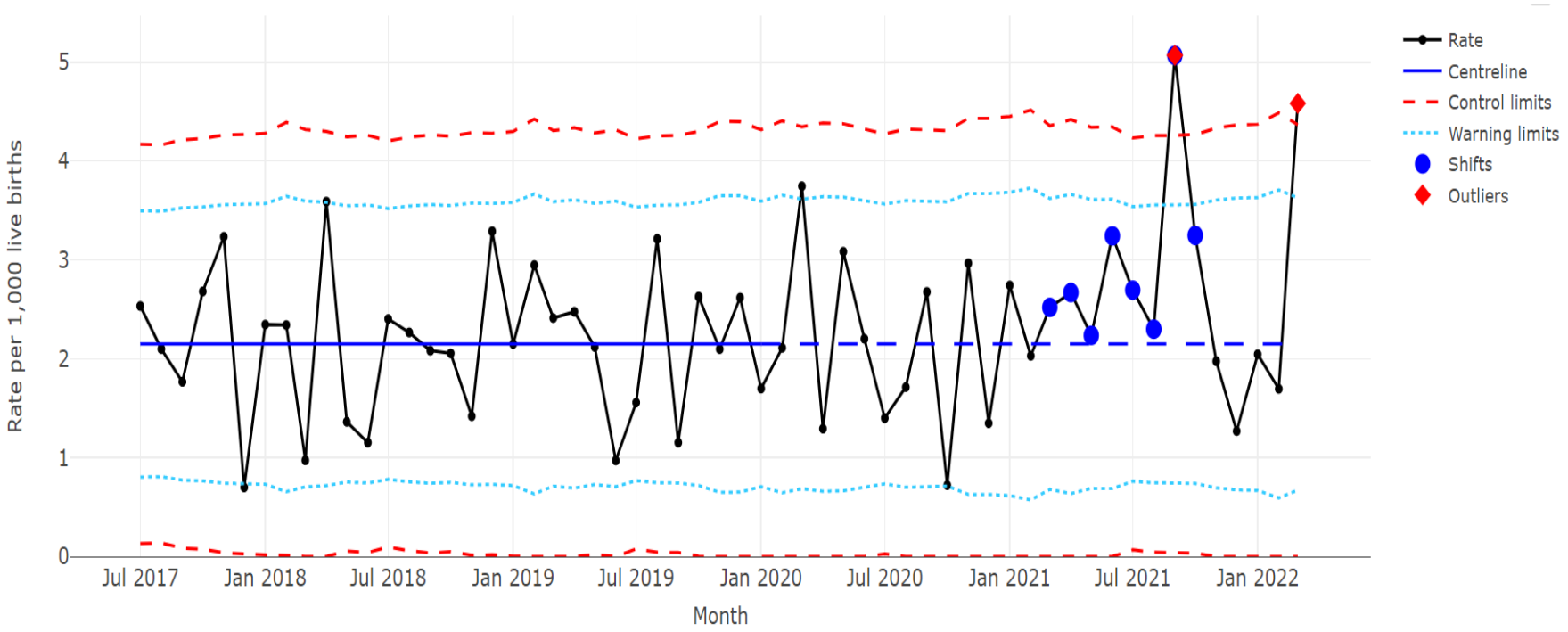
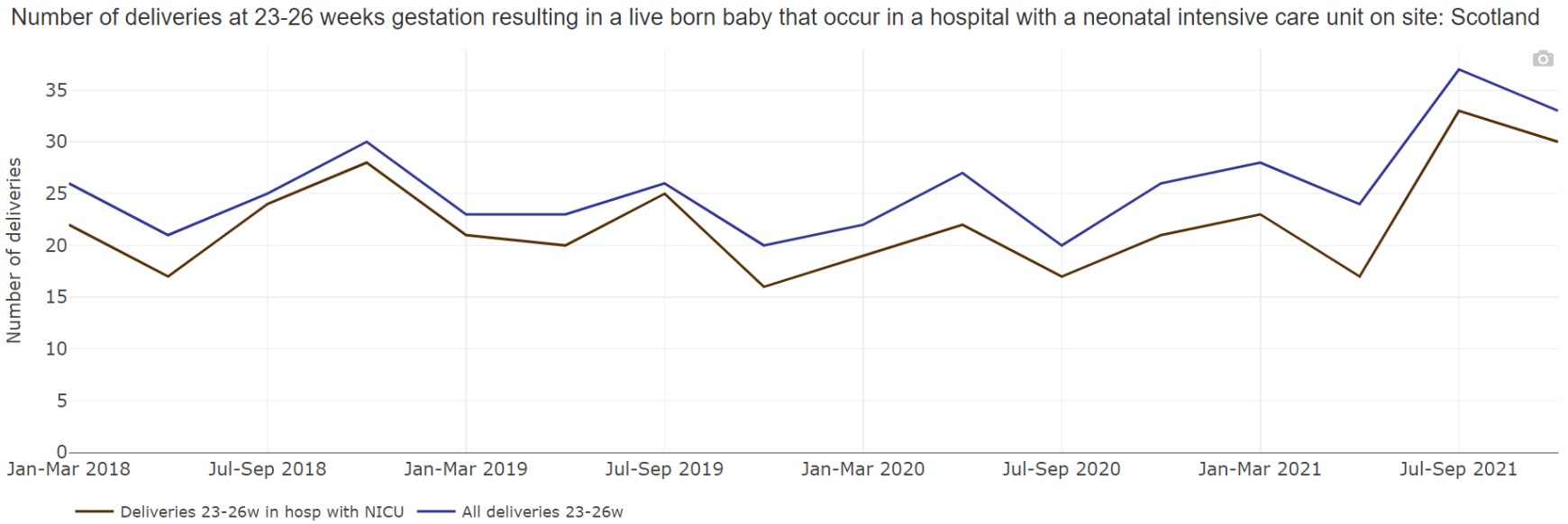
Neonatal Mortality: Scotland



Source: Public Health Scotland

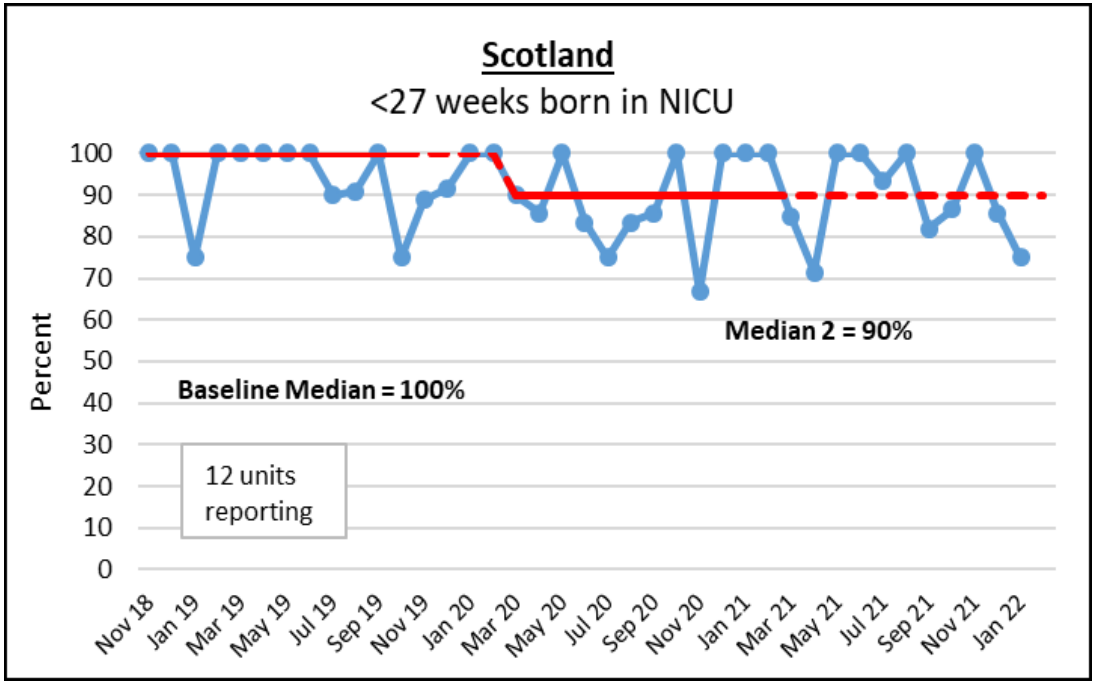
Impact of Extreme Prematurity



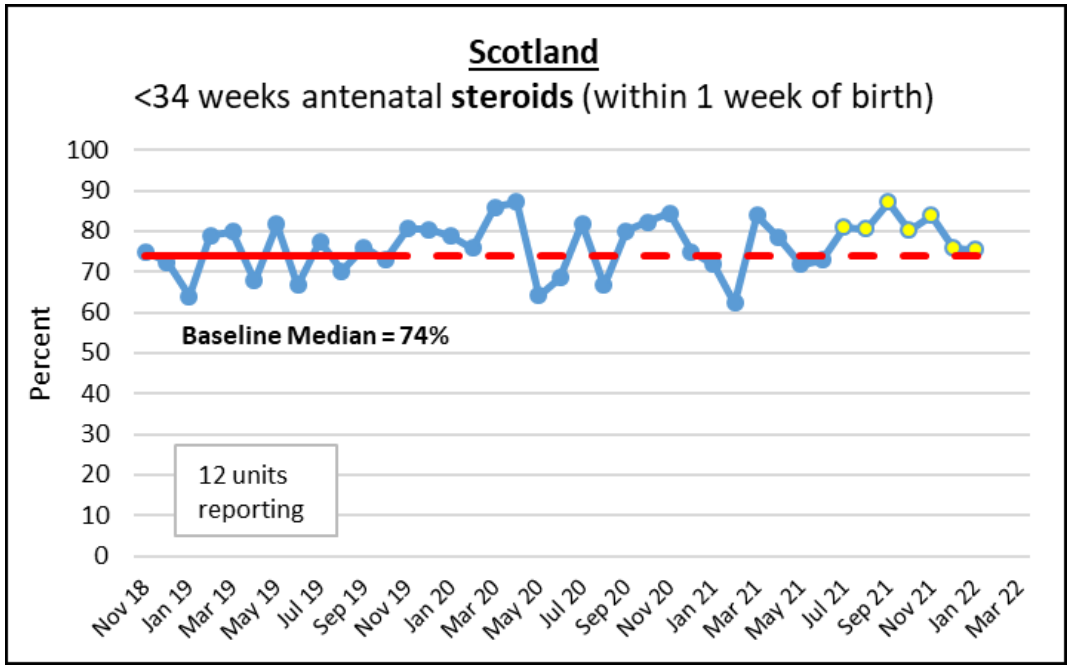
Source: Public Health Scotland

PPWP – where are we now?

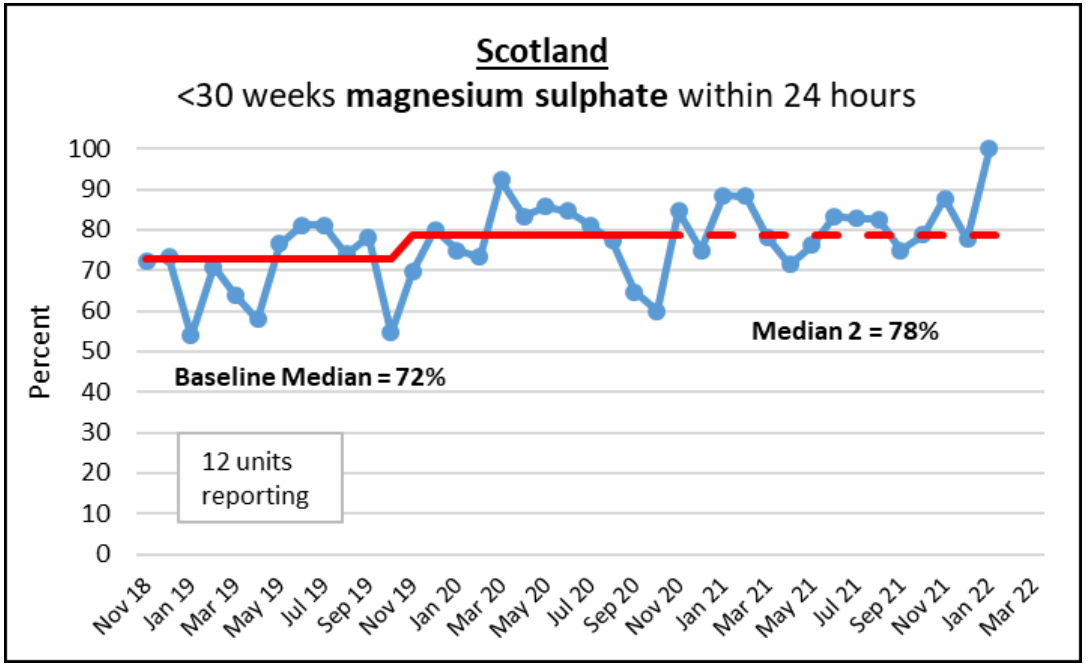
PPWP – Born in NICU



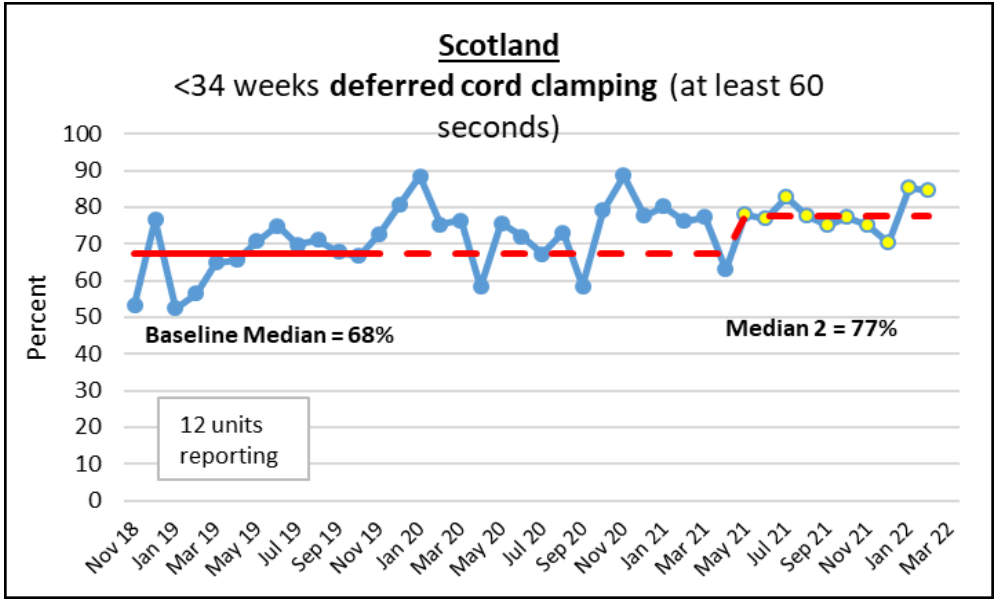
PPWP – Antenatal Steroids



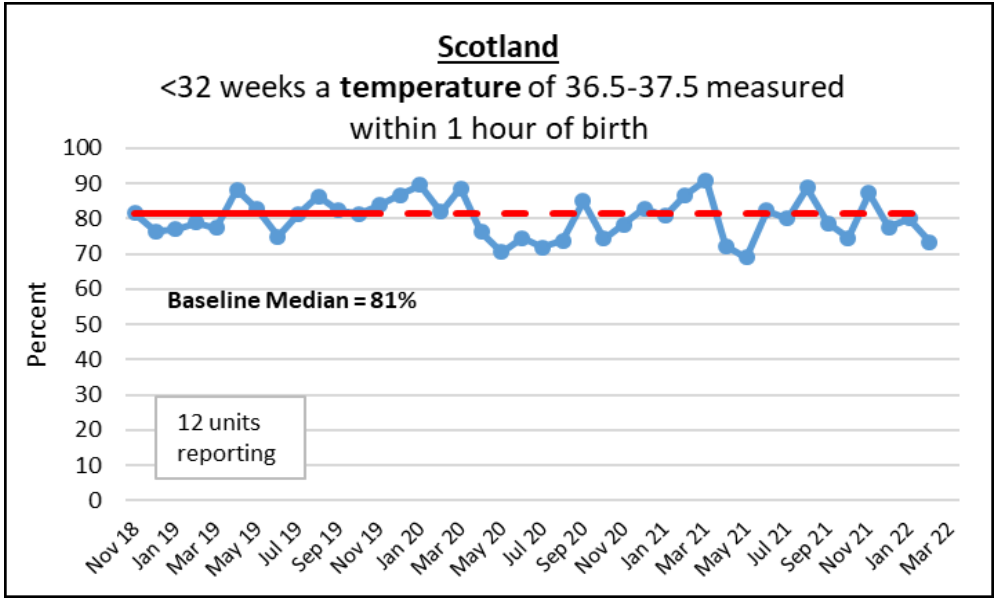
PPWP – Magnesium Sulphate

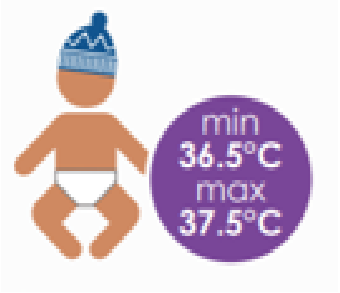


PPWP – Deferred Cord Clamping

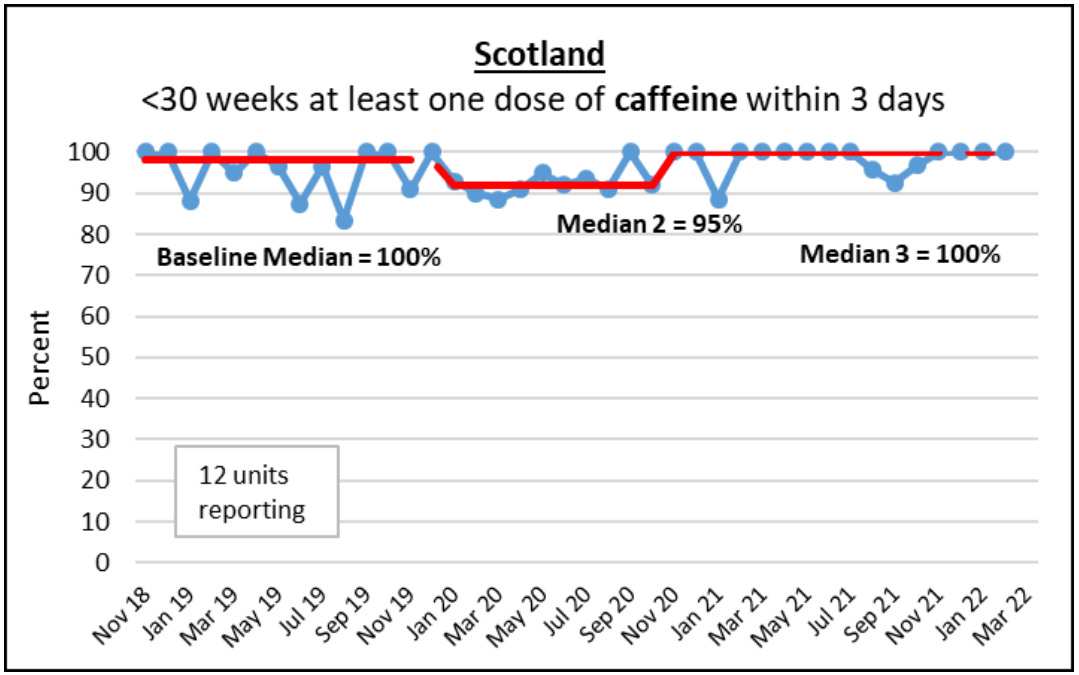


PPWP – Temperature

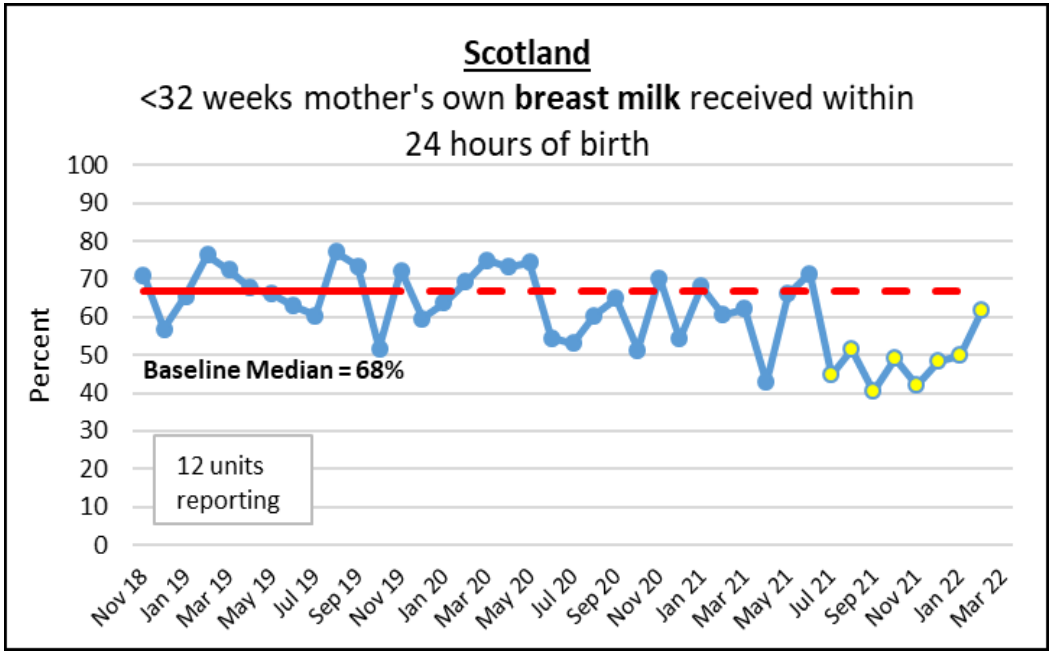


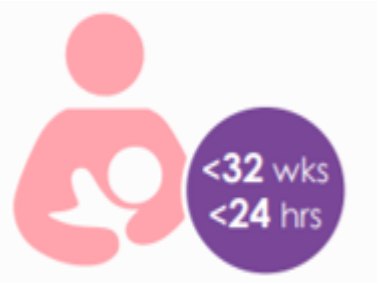


PPWP – Caffeine



PPWP – Maternal Milk





Board sharing

Preterm Perinatal Wellbeing package in University Hospital Wishaw (UHW) – *successes, challenges & future*

Dr Augusta Anenih

Consultant Neonatologist

NHS Lanarkshire

Delivering The Perinatal Wellbeing Package - UHW

PRETERM PERINATAL PACKAGE

A group of multidisciplinary interventions clinically proven to reduce morbidity and mortality, resulting in significantly improved outcomes for preterm babies.

NICU Delivery

- Extreme preterm birth in a tertiary unit setting significantly improves survival and neurodevelopmental outcomes

AIM:
Optimally timed in-utero transfers should ensure infants **<27 weeks** are delivered in specialist tertiary neonatal units.

Antenatal Steroids

- Reduces mortality by **32%**
- Reduces preterm lung disease, brain haemorrhage, necrotising enterocolitis (NEC) and sepsis

AIM:
All mothers delivering **<34 weeks** should receive a full course of steroids, ideally in the **7 days before birth**, for maximum efficacy.

Magnesium Sulphate

- Reduces risk of cerebral palsy by **30%**
- For every 37 women given magnesium sulphate, 1 less baby will develop cerebral palsy

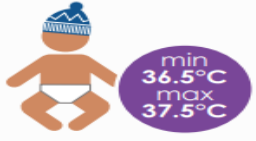
AIM:
All mothers delivering **<30 weeks** should receive magnesium sulphate, ideally in the **24 hours before delivery** for maximum efficacy.

Deferred Cord Clamping

- Reduces mortality by **32%**
- Reduces brain haemorrhage
- Reduces the need for blood transfusion

AIM:
To achieve these full benefits, all babies **<34 weeks** should receive deferred cord clamping of a MINIMUM of **60 seconds**.

Maintain Temperature



- Early hypothermia (<36.5°C) increases mortality and risk of brain haemorrhage, NEC and sepsis
- Emerging evidence links early hyperthermia (>38°C) to adverse outcomes

AIM:
Ensure strict thermoregulatory measures to achieve normothermia (**36.5 - 37.5°C**) within an hour of birth.

Mum's Breast Milk

- Safest milk for preterm babies
- Significantly reduces the risk of sepsis and NEC
- Reduces mortality & improves neurodevelopmental outcomes

AIM:
All infants **<32 weeks** should receive maternal milk, ideally within the **first 24 hours** of life.

Early Caffeine

- Reduces apnoea, invasive ventilation and preterm lung disease
- Improves survival without neurodevelopmental disability

AIM:
All infants born **<30 weeks** should receive caffeine within 3 days, **ideally on admission** to NICU.

Produced by Lynsey Still and Gemma Edwards for
@PRM_NEO_Team
in partnership with
EVERY PERSON EVERY TIME
SCOTTISH PATIENT SAFETY PROGRAMME
MCQIC
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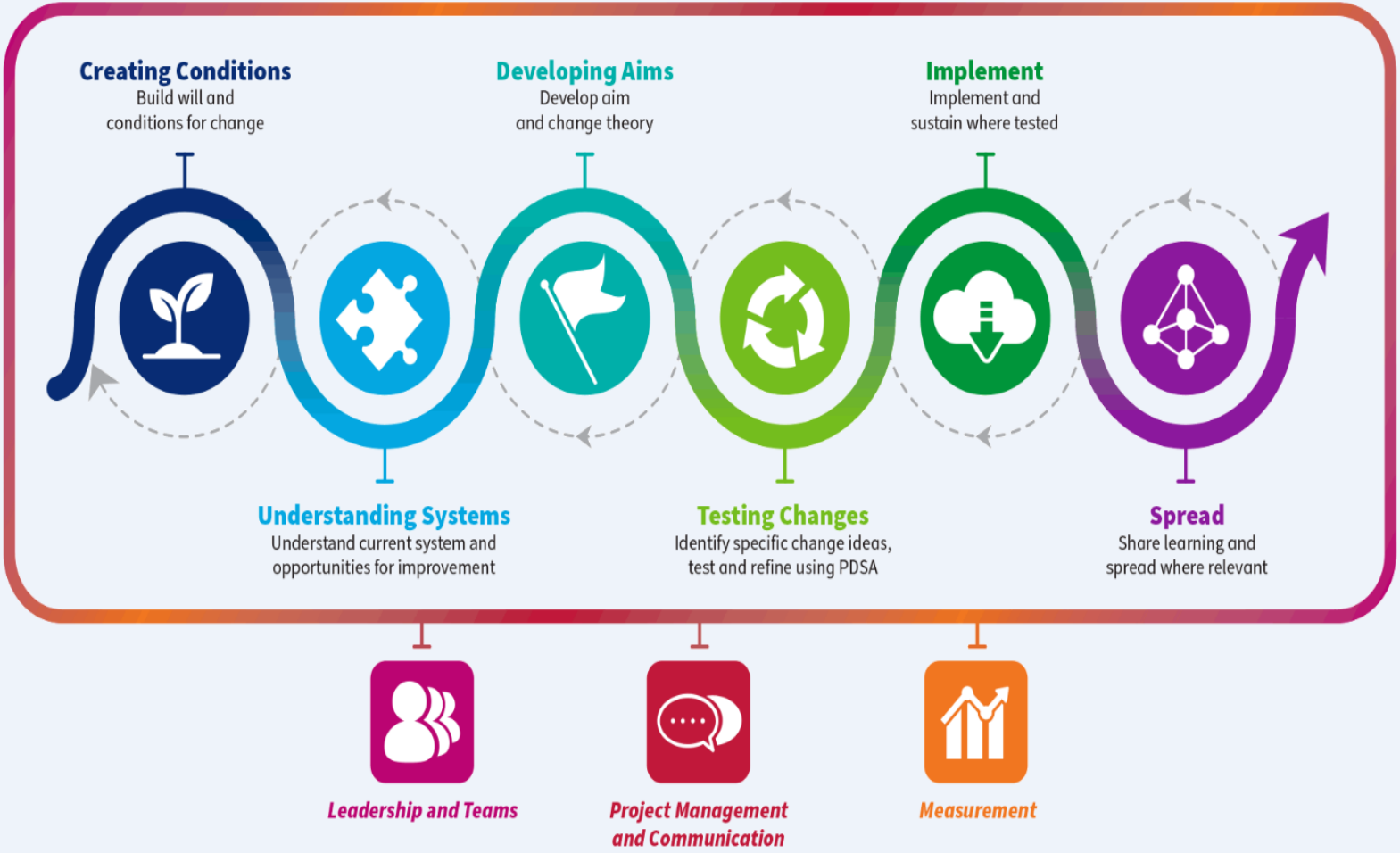
@mcqicspsp

Aims

Through collaborative working between the Maternity and Neonatal Units, the UHW NICU team will achieve 85% compliance in delivering on all the elements of the Preterm Perinatal Wellbeing Package.

- ❑ Administration of antenatal steroids (within 1week of delivery) @ GA < 34 weeks
- ❑ Administration of Magnesium Sulphate within 24 hours @ GA <30 weeks
- ❑ Optimal Delayed Cord Clamping for >/= 60 seconds
- ❑ Achieve & maintain normothermia
- ❑ Early caffeine in preterms GA < 30 weeks
- ❑ Mothers own milk in within 24 hours in preterms < 32 weeks GA

Quality Improvement Journey

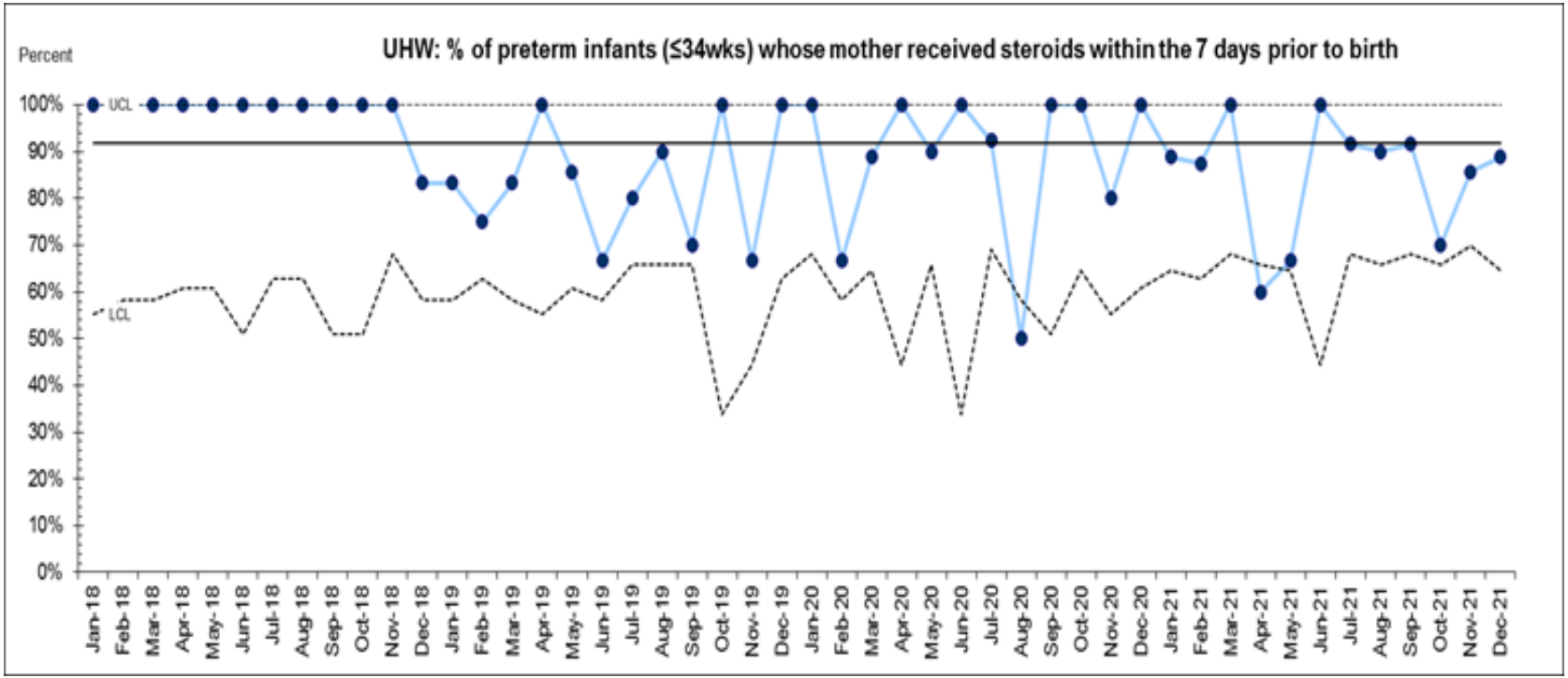


Successes

- Data.
- People and teams.
- Processes.
- Culture and mindset.

UNIVERSITY HOSPITAL WISHAW
NEONATAL UNIT

Data elements



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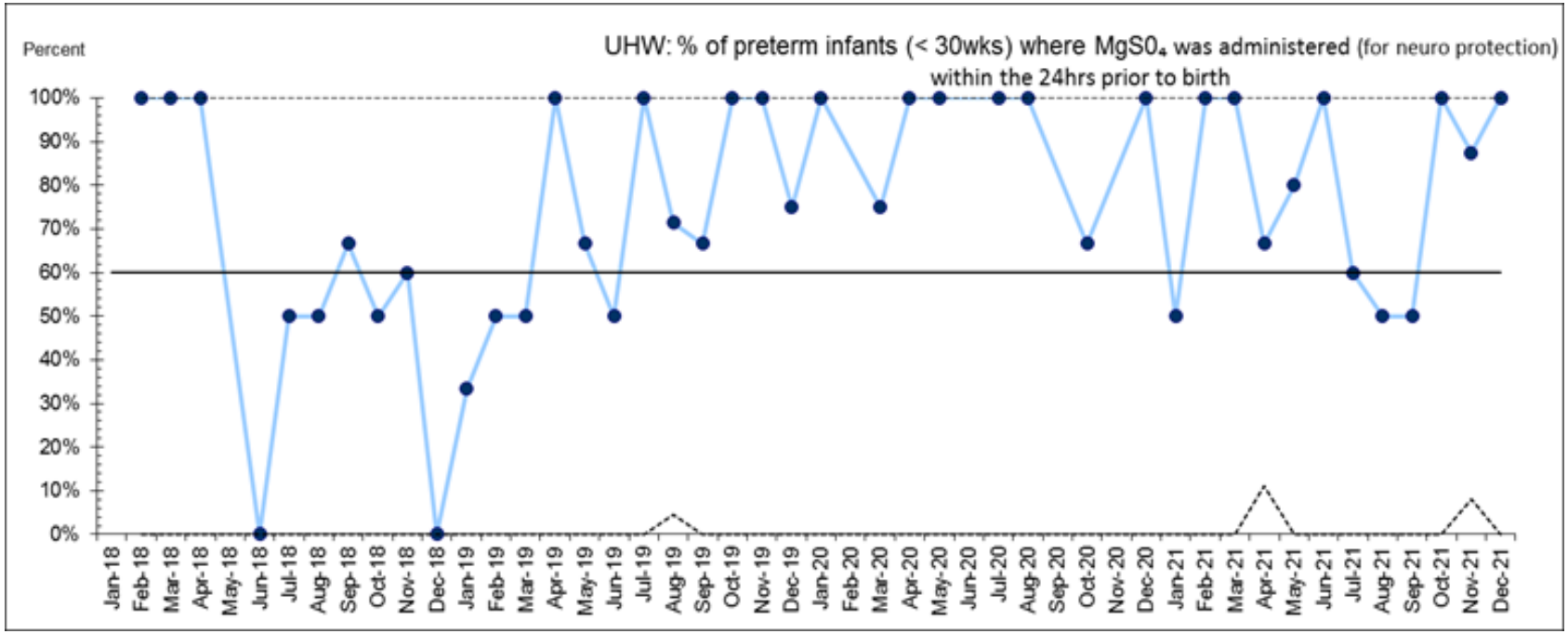
NEONATAL UNIT


Percent
UHW: % of preterm infants (< 30wks) where $MgSO_4$ was administered (for neuro protection) within the 24hrs prior to birth
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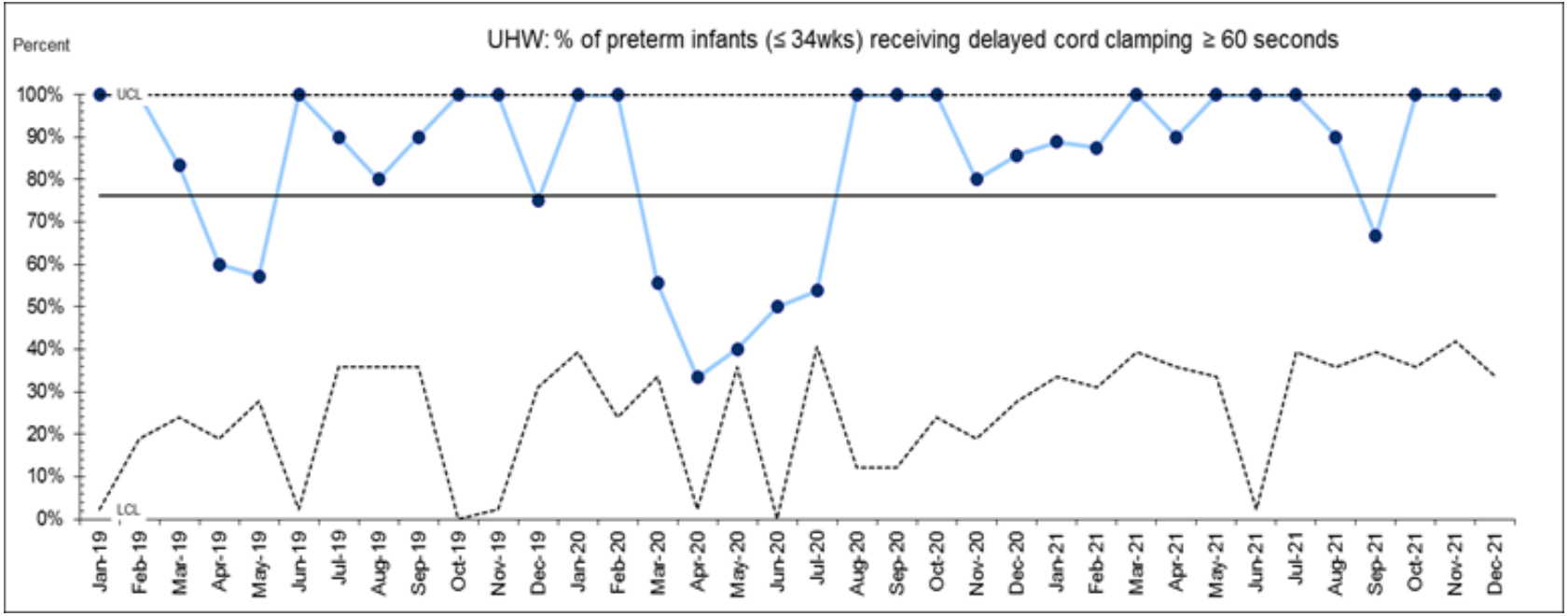
UHW: % of preterm infants (≤ 34wks) receiving delayed cord clamping ≥ 60 seconds
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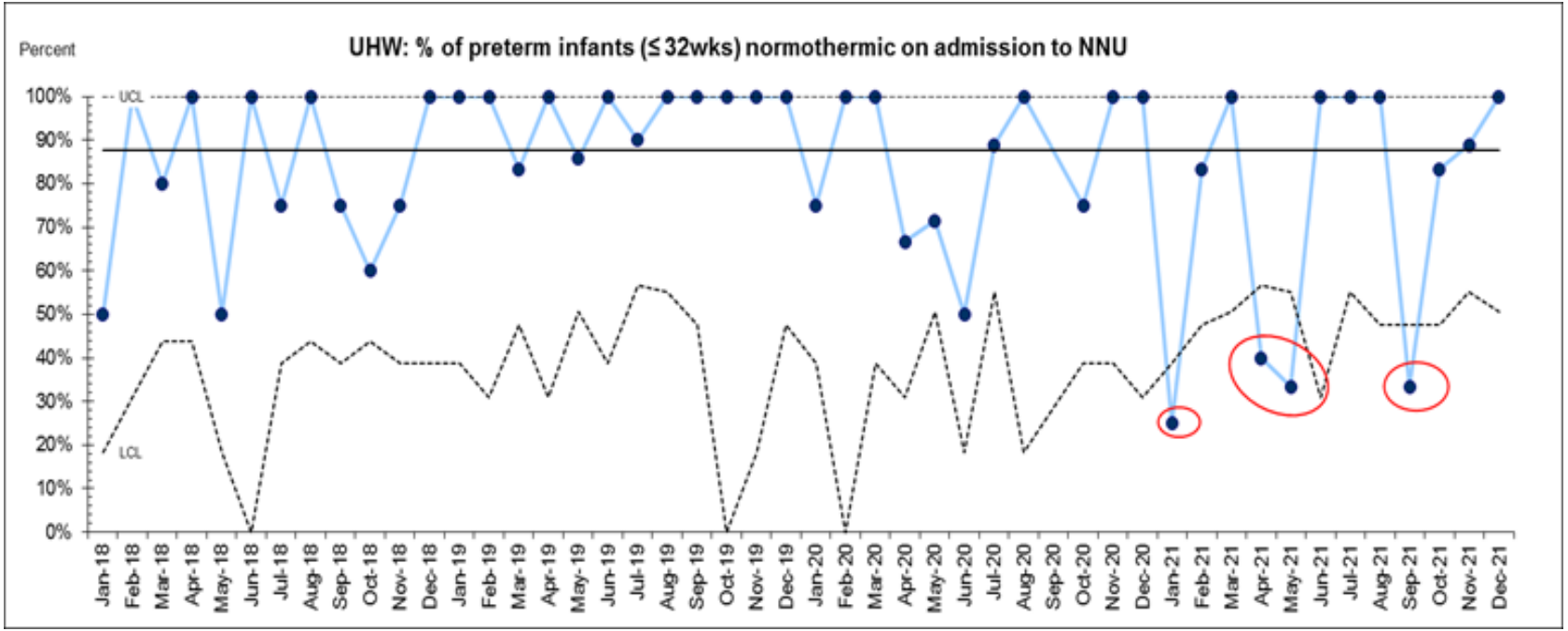
UHW: % of preterm infants (≤ 32wks) normothermic on admission to NNU
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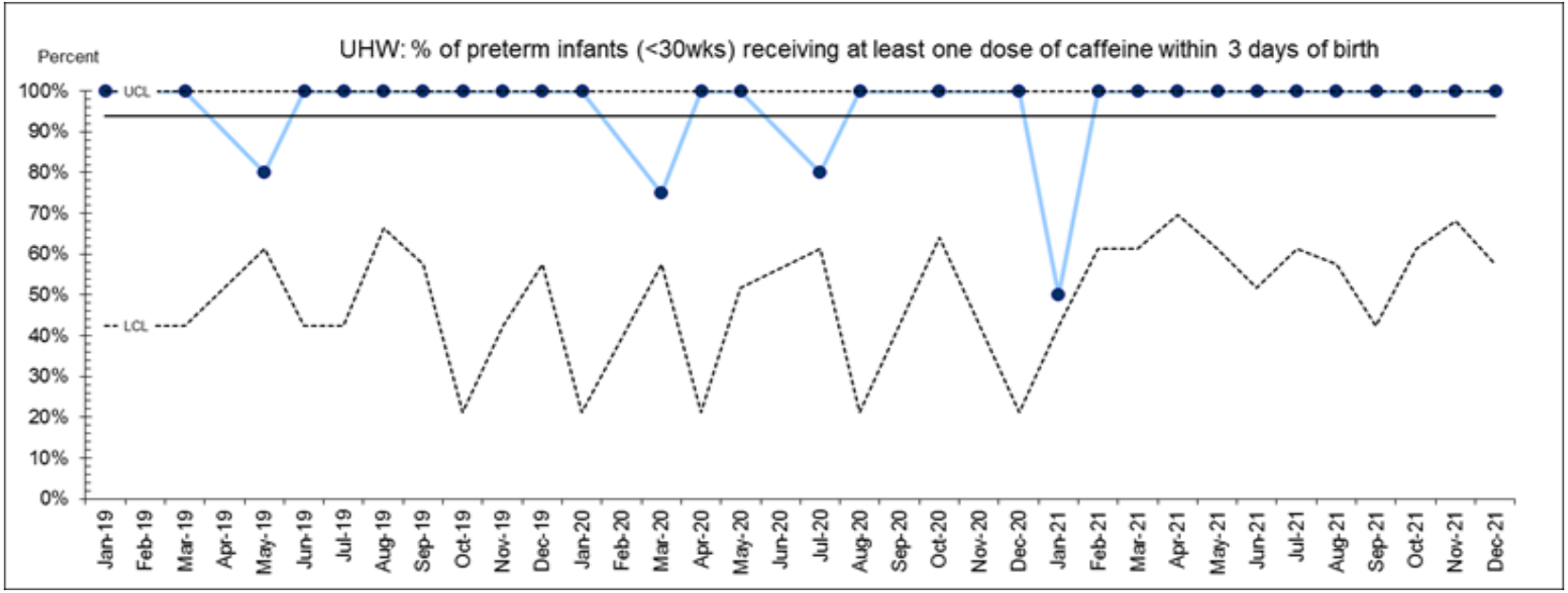
UHW: % of preterm infants (<30wks) receiving at least one dose of caffeine within 3 days of birth
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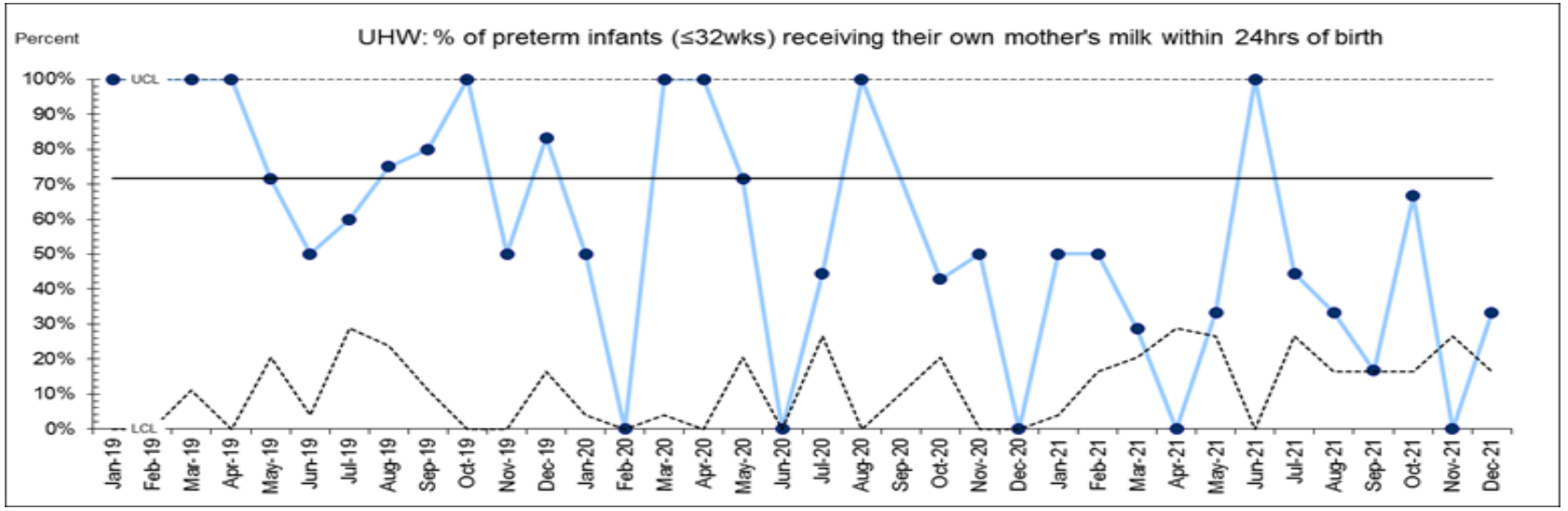
Percent
UHW: % of preterm infants (≤32wks) receiving their own mother's milk within 24hrs of birth
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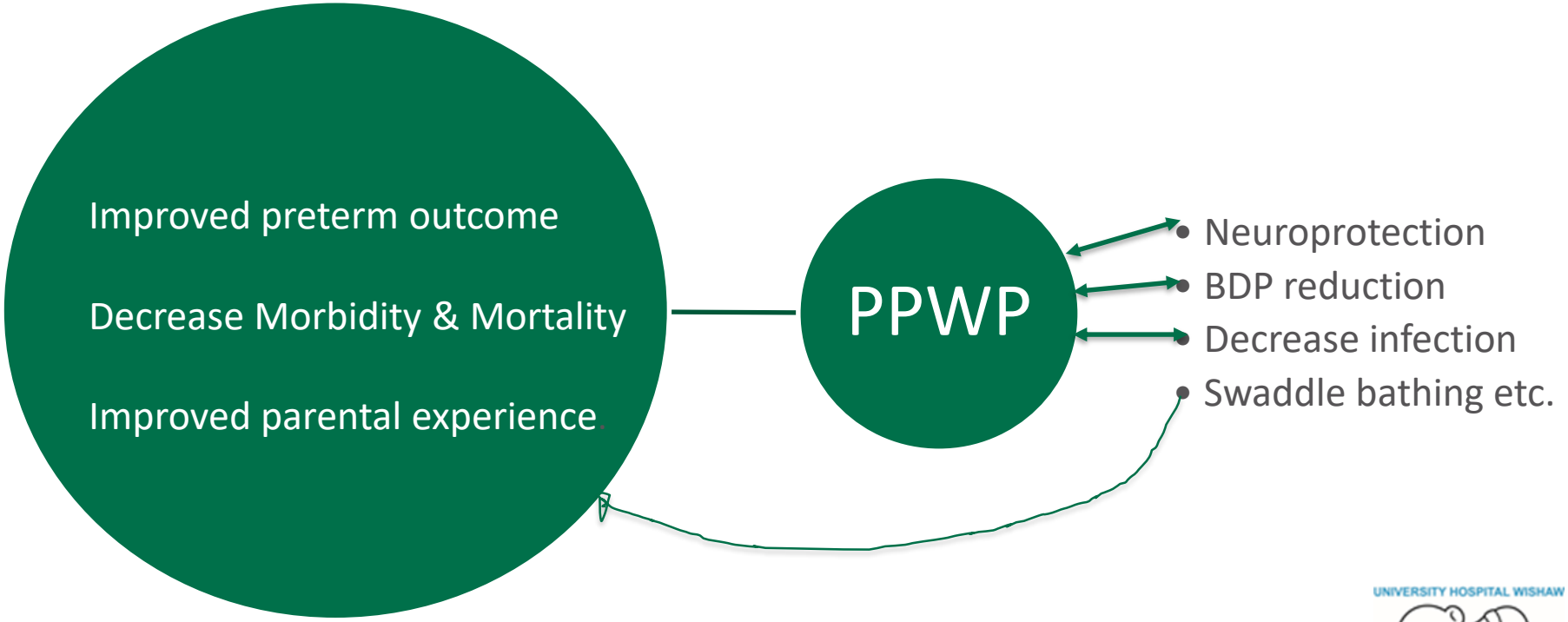
Challenges

- People
    - turn over and capacity
    - culture- local.
- Competing priorities.
- Maintaining drive.
- Data entry/EPR.

NEXT STEPS- The PPWP Lanarkshire extension



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Neuro-protection bundle

- **Aim**

To achieve a 30% reduction in significant (grade 3 & 4) IVHs and cystic PVL following implementation of an evidence based neuroprotective care bundle in preterm infants < 30 weeks gestation born in UHW neonatal team.

- **Bundle principles**
  - Decrease sudden and large pressure changes.
  - Midline positioning and tilt.
  - Two person technique cares.
  - Positive parental touch

BPD reduction bundle

Bundle principles

- Delivery room practices.
- Risk identification, prognostication & review (MDT) Day 1, 3, 5, (7-10).
- Targeted Haemodynamic optimisation.
- Optimise Nutrition – Dietetics, pro.

rease infection.

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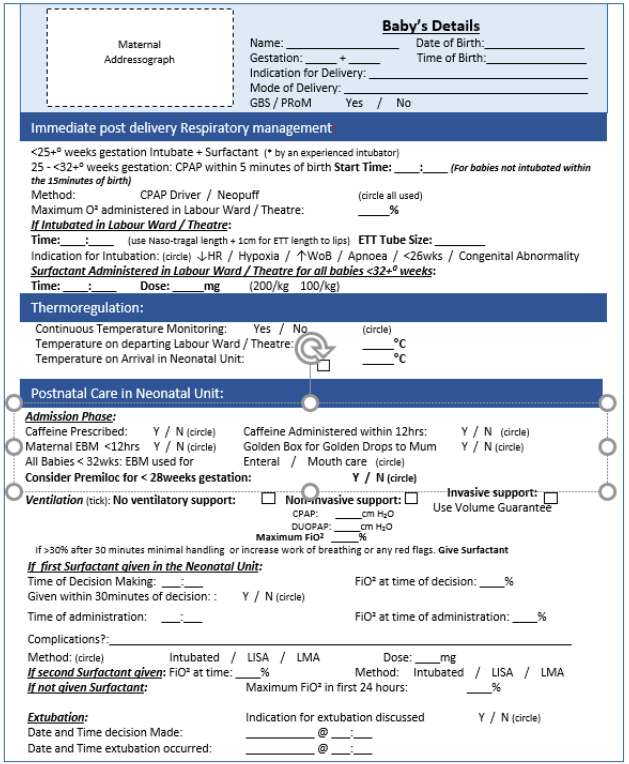
Preterm BPD reduction Bundle



Maternal Addressograph

Baby's Details
Name: _____ Date of Birth: _____
Gestation: ____ + ____ Time of Birth: _____
Indication for Delivery: _____
Mode of Delivery: _____
GBS / PRoM Yes / No

Immediate post delivery Respiratory management

<25+⁰ weeks gestation Intubate + Surfactant (• by an experienced intubator)
25 - <32+⁰ weeks gestation: CPAP within 5 minutes of birth **Start Time:** ____:____ ***(For babies not intubated within the 15minutes of birth)***
Method: CPAP Driver / Neopuff (circle all used)
Maximum O² administered in Labour Ward / Theatre: _____%
If Intubated in Labour Ward / Theatre:
Time:____:____ (use Naso-tragal length + 1cm for ETT length to lips) **ETT Tube Size:** _____
Indication for Intubation: (circle) ↓HR / Hypoxia / ↑WoB / Apnoea / <26wks / Congenital Abnormality
Surfactant Administered in Labour Ward / Theatre for all babies <32+⁰ weeks:
Time: ____:____ **Dose:** _____**mg** (200/kg 100/kg)

Thermoregulation:

Continuous Temperature Monitoring: Yes / No (circle)
Temperature on departing Labour Ward / Theatre: _____°C
Temperature on Arrival in Neonatal Unit: _____°C

Postnatal Care in Neonatal Unit:

Admission Phase:
Caffeine Prescribed: Y / N (circle) Caffeine Administered within 12hrs: Y / N (circle)
Maternal EBM <12hrs Y / N (circle) Golden Box for Golden Drops to Mum Y / N (circle)
All Babies < 32wks: EBM used for Enteral / Mouth care (circle)
Consider Premiloc for < 28weeks gestation: **Y / N (circle)**

Ventilation (tick): **No ventilatory support:** ☐ **Non-invasive support:** ☐ **Invasive support:** ☐ Use Volume Guarantee
CPAP: _____cm H_2O
DUOPAP: _____cm H_2O
Maximum FiO^2 _____%
If >30% after 30 minutes minimal handling or increase work of breathing or any red flags. **Give Surfactant**

If first Surfactant given in the Neonatal Unit:
Time of Decision Making: ___:___ FiO^2 at time of decision: ____%
Given within 30minutes of decision: : Y / N (circle)
Time of administration: ___:___ FiO^2 at time of administration: ____%
Complications?:_____
Method: (circle) Intubated / LISA / LMA Dose: ____mg
If second Surfactant given: FiO^2 at time: ____% Method: Intubated / LISA / LMA
If not given Surfactant: Maximum FiO^2 in first 24 hours: ____%

Extubation: Indication for extubation discussed Y / N (circle)
Date and Time decision Made: _____ @ ___:___
Date and Time extubation occurred: _____ @ ___:___

NEXT STEPS

- CLABSI – Road to Zero ☺
- Golden hour refocus

Special thanks to

- ❑ NICU nursing & medical team
- ❑ Lorna Lennox – QI midwife
- ❑ Dr Montasser- NBP lead
- ❑ Dr Gopalakrishnan- BPD reduction
- ❑ Michelle Brooks - Practice educator
- ❑ Dr Karen McCall- Golden Hour lead

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@wishawneonatal

NHS Lanarkshire

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Maternal milk and temperature

Dr Jennifer Hendry

ST2 Paediatric Care

NHS Lothian

GOING FOR GOLD!

Improvement work in PPWP

Dr J Hendry & Dr L Dunn
Supervised by Dr JC Becher
Simpson Centre for Reproductive Health, Royal Infirmary, Edinburgh

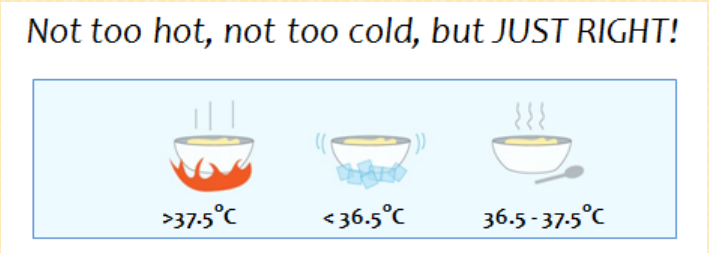
NHS Lothian

OVERVIEW

- Continual audit of all babies <34 weeks for compliance with PPWP.
- 2021-22: work on normothermia and maternal breast milk within 24h.
- Two projects:
  - Goldilocks – getting the temperature just right
  - Golden drops – supporting maternal breast milk

WORK SO FAR

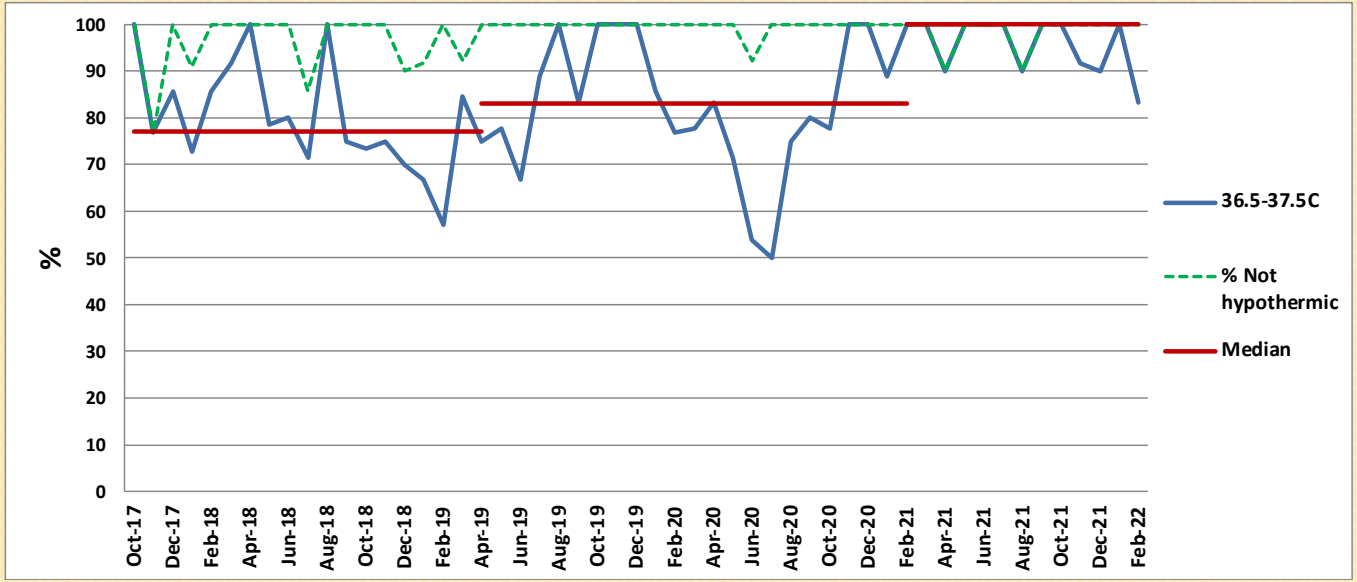
- Goldilocks sticker competition: Single role allocation during preterm birth pre-brief, continuous temperature monitoring during stabilisation with radiant heat adjustment.
- Rotational nature of junior doctor placements



ADDITIONAL WORK DONE

- March 2021: Re-launch week
  - Fresh poster
  - New graphics shared to the team Whatsapp to provide education on optimising thermal care.
- Re-shared to subsequent trainees.

<32 WEEKS: ADMISSION NORMOTHERMIA



Goldilocks Launched

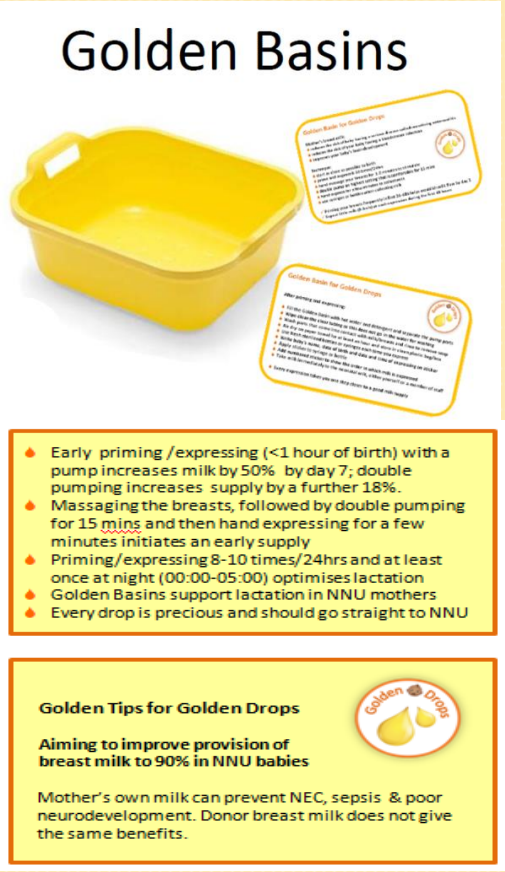
Goldilocks re-launched

ONGOING WORK

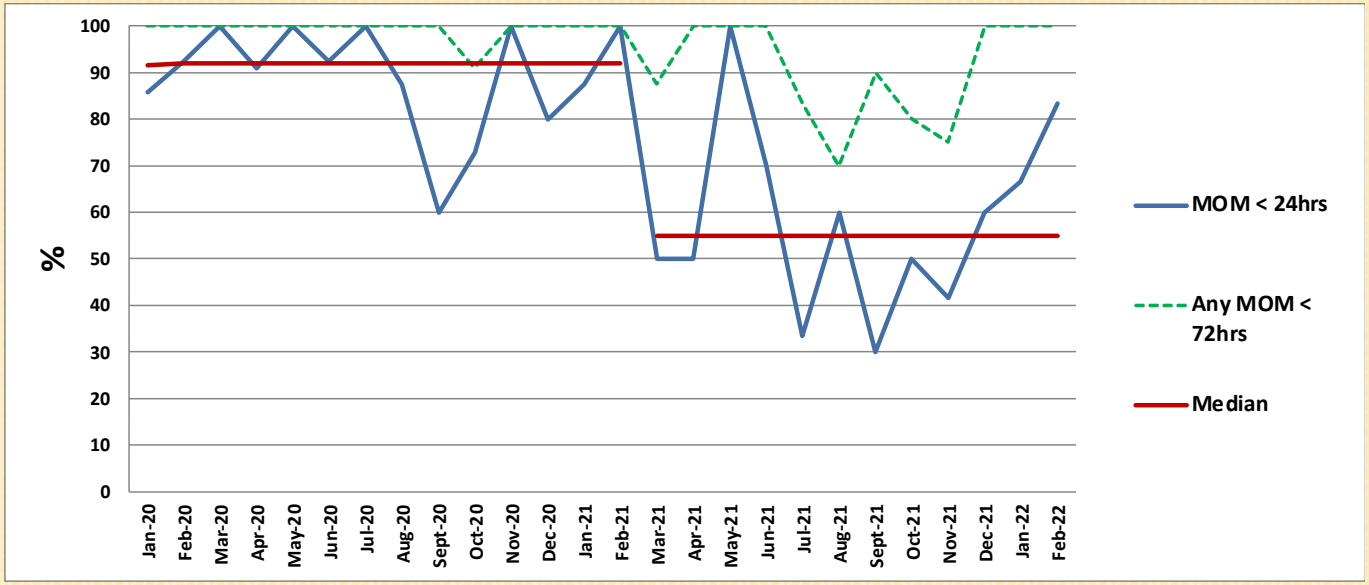
- NNAP 90% target sustained over last year
  - Ongoing success reflective of cultural change
  - Embedded change into practice
  - Shared goal
- Measures need to be sustainable
  - Competition element for team enjoyment
  - Continual education utilising our new resources during “Re-launch weeks” with each new group of doctors rotating.

GOLDEN DROPS: WORK SO FAR

- Golden Basins for all mums of babies in NNU:
  - physical equipment to help with expressing
  - stickers with advice on good practice
- Staff cards with “Golden tips for Golden Drops”

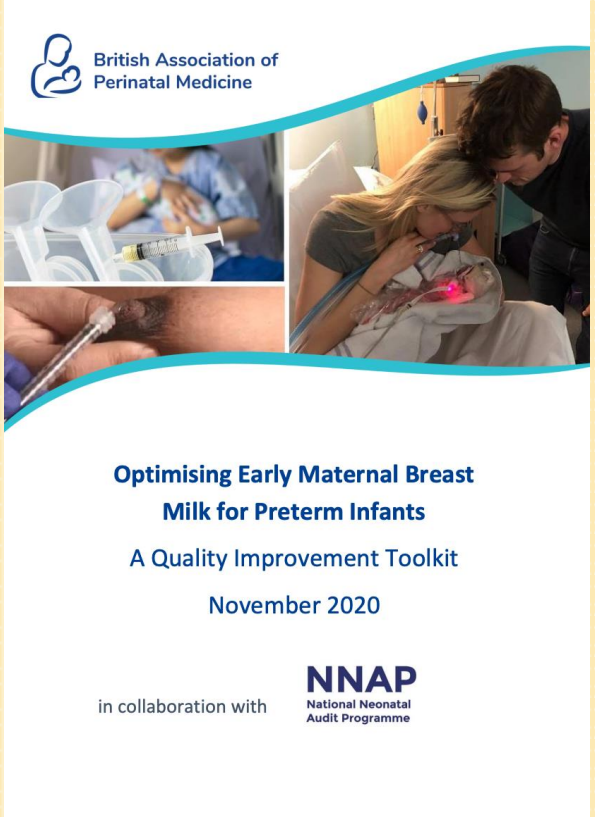


<32 WEEKS: MEBM WITHIN 24 HRS



ONGOING WORK AND CHALLENGES

- Recognise there have been challenges
  - Some out with our control ie. Maternal illness, staff disruption
- Collect more data about barriers to change
  - Backslash creation for use on TRAK



CONCLUSION

- The importance of shared goals across the whole perinatal team.
- Must not become complacent.

REFERENCES

- British Association of Perinatal Medicine in collaboration with NNAP. 2019. ‘Improving Normothermia in Very Preterm Infants. A Quality Improvement Toolkit’. Available at: Normothermia_Toolkit_Full_version.pdf (hubble-live-assets.s3.amazonaws.com)
- British Association of Perinatal Medicine in collaboration with NNAP. 2020. ‘Optimising Early Breast milk for Preterm Infants. A Quality Improvement Toolkit’. Available at: BAPM_Preterm_MBM_Toolkit_Final_for_publication.pdf (hubble-live-assets.s3.amazonaws.com)

Deferred cord clamping

Dr Gemma Edwards

ST6 Paediatric Trainee

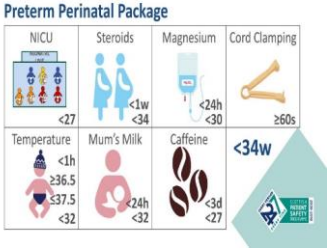
NHS Greater Glasgow and Clyde

The Preterm Bundle: Improving Perinatal Optimisation for Preterm Babies

Deferred Cord Clamping

Dr Gemma Edwards
ST6 Paediatric Trainee
Scottish Clinical Leadership Fellow
Princess Royal Maternity, Glasgow

Background



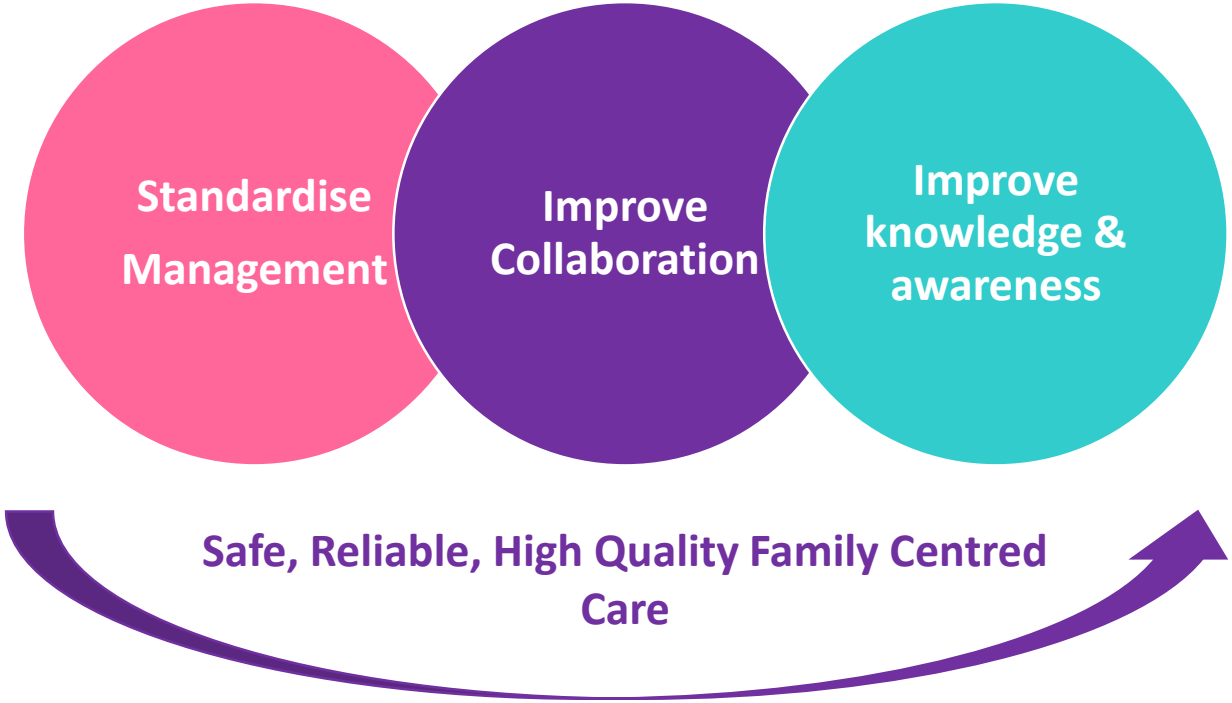
- Launch of SPSP MCQIC Preterm Wellbeing Package (PPWP) in 2017.
- Local NNAP & MCQIC data showed variable compliance with the various elements of the perinatal optimisation.
- Need for improvement and more collaboration across our teams.

PRM NEO TEAM

NHS Greater Glasgow and Clyde

Building Our Team

Aims of the Project



The Preterm Bundle

Preparation

- Ensures the team are organised & equipment checked
- Roles allocated & team huddle undertaken

Pause

- MDT pause to summarise background, highlighting importance of timeous antenatal steroids & magnesium
- Formalise action plan for delivery including DCC & cord bloods

Postnatal

- Optimise thermal care techniques
- Delivery room cuddle for stable babies
- Prompt for early caffeine, hydrocortisone & breast milk

PRM NEO TEAM

NHS Greater Glasgow and Clyde

PRM PRETERM DELIVERY BUNDLE FOR <34 WEEKS

NHS Greater Glasgow and Clyde

1. PREPARATION

TEAM HUDDLE
- Allocate roles
- Clarify delivery plan

EQUIPMENT
- Resuscitaire
- Facemask
- Stethoscope
- Laryngoscope
- ET tube+/-introducer
- Pedi-cap
- ETT fixator
- CPAP/VENTILATOR set up
- +/-SURFACTANT

MONITORING
- Philips X3 monitor
- Saturation probe (right hand)
- Continuous temp probe

THERMOREGULATION
- Room temp _____ ºC
- Plastic bag (<32 weeks)
- Warm Linen
- Humidification
- Incubators on pre-warm

CORD BLOODS GRAB BAG

2. PAUSE WITH OBSTETRICS

Baby Name _____
Date of Birth _____
Gestation _____ + _____
Time of Birth _____ : _____

Maternal CHI _____
Indications for delivery _____
Mode of Delivery _____
GBS/PROM YES ☐ NO ☐

- **ANTENATAL STEROIDS**
  Aim: FOR ALL BABIES, GIVEN WITHIN 1 WEEK OF BIRTH
  Achieved: YES ☐ NO ☐
  Last dose: ___/___/___ at ___:___ 1st dose ☐ 2nd dose ☐
- **MAGNESIUM SULPHATE**
  Aim: FOR ALL BABIES <30 WEEKS, GIVEN WITHIN 24 HOURS OF BIRTH
  Achieved: YES ☐ NO ☐ N/A ☐
- **DEFERRED CORD CLAMPING**
  Aim: FOR ALL BABIES TO RECEIVE MINIMUM 60 SECONDS DCC
  Achieved: YES ☐ NO ☐
  Reasons if no OR if <60secs: _____
- **CORD BLOODS**
  Aim: ALL BABIES <30 WEEKS FOR ADMISSION BLOODS VIA CORD (2ml)
  Achieved: YES ☐ NO ☐

3. POSTNATAL

- Respiratory support at birth SVIA ☐ CPAP ☐ Ventilation ☐
- Delivery Room Cuddle YES ☐ NO ☐ Duration _____ mins Well tolerated? YES ☐ NO ☐
  Reasons if no cuddle _____
- Admission
  Temperature _____ ºC (on arrival in transport incubator)
  Blood sugar _____
- **CAFFEINE**
  Aim: ALL BABIES <30 WEEKS TO RECEIVE CAFFEINE <72 HRS OF AGE
  Achieved: YES ☐ NO ☐
- **MEBM**
  Aim: FOR ALL BABIES <32 WEEKS TO RECEIVE MEBM WITHIN 24 HRS
  Achieved: YES ☐ NO ☐

Entered into SPSP Spreadsheet ☐ Initials

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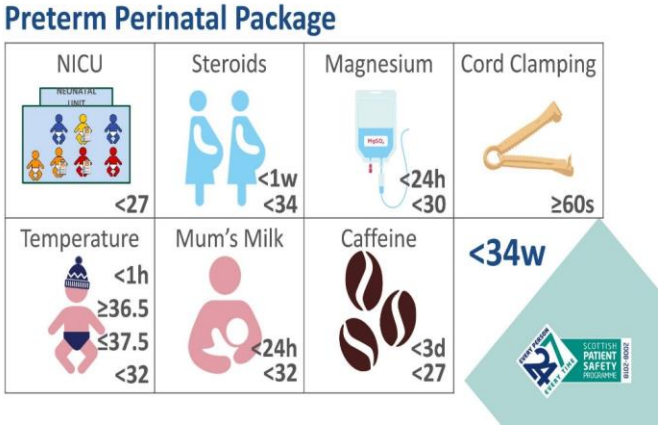
Preterm Huddle & Pause

Education

- Need for an education to underpin the preterm bundle.
- Multiple MDT bite size sessions, running regularly and repeated over time to ensure learning retained.



PRETERM PERINATAL PACKAGE

A group of multidisciplinary interventions clinically proven to reduce morbidity and mortality, resulting in significantly improved outcomes for preterm babies.

NICU Delivery

- Extreme preterm birth in a tertiary unit setting significantly improves survival and neurodevelopmental outcomes

AIM:

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- Reduces risk of cerebral palsy by **30%**
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- Reduces brain haemorrhage
- Reduces the need for blood transfusion

AIM:

To achieve these full benefits, all babies **<34 weeks** should receive deferred cord clamping of a MINIMUM of **60 seconds**.

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- Early hypothermia (<36.5°C) increases mortality and risk of brain haemorrhage, NEC and sepsis
- Emerging evidence links early hyperthermia (>38°C) to adverse outcomes

AIM:

Ensure strict thermoregulatory measures to achieve normothermia (**36.5 - 37.5°C**) within an hour of birth.

Mum's Breast Milk

- Safest milk for preterm babies
- Significantly reduces the risk of sepsis and NEC
- Reduces mortality & improves neurodevelopmental outcomes

AIM:

All infants **<32 weeks** should receive maternal milk, ideally within the **first 24 hours** of life.

Early Caffeine

- Reduces apnoea, invasive ventilation and preterm lung disease
- Improves survival without neurodevelopmental disability

AIM:

All infants born **<30 weeks** should receive caffeine within 3 days, **ideally on admission** to NICU.

Produced by Lynsey Still and Gemma Edwards for
@PRM_NEO_Team
in partnership with
SCOTTISH PATIENT SAFETY PROGRAMME
MCQIC
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@mcqicspsp

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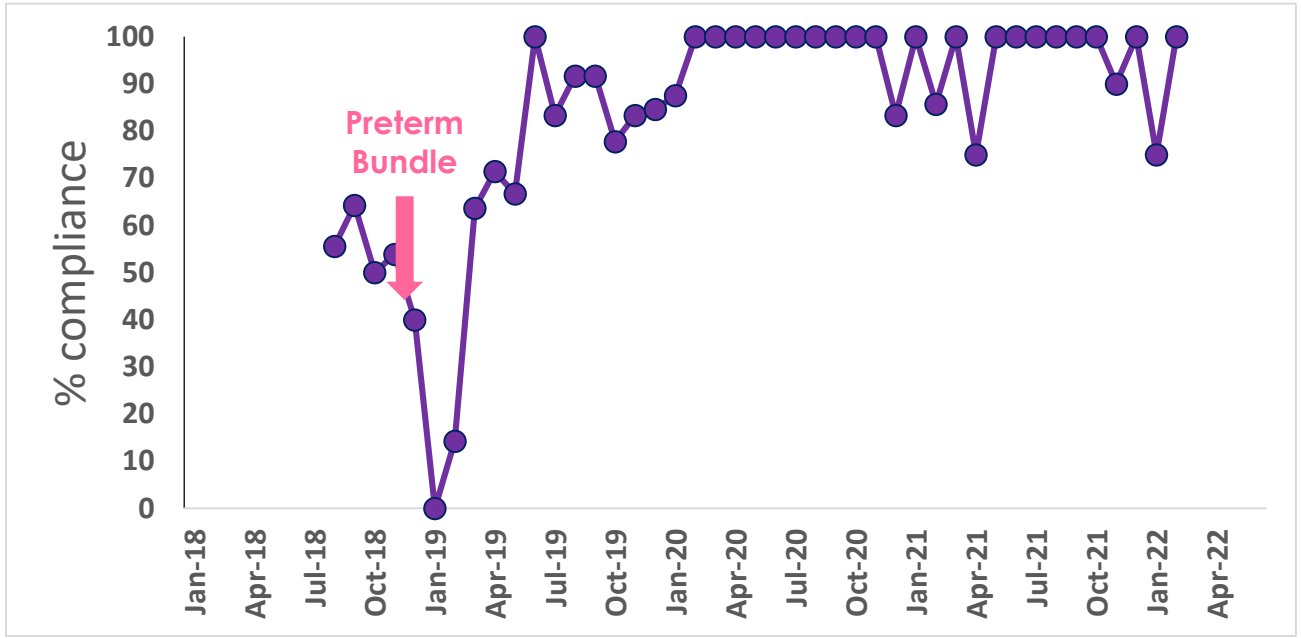
Results: Deferred Cord Clamping



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Results: Deferred Cord Clamping

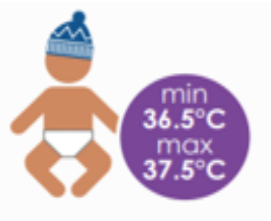
2018 — 57%

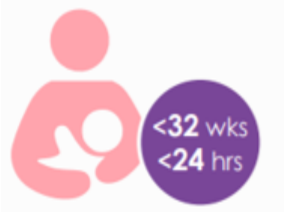
2021 — 80%

Results

2018	75% (93%)	63%
2021	76% (97%)	85%

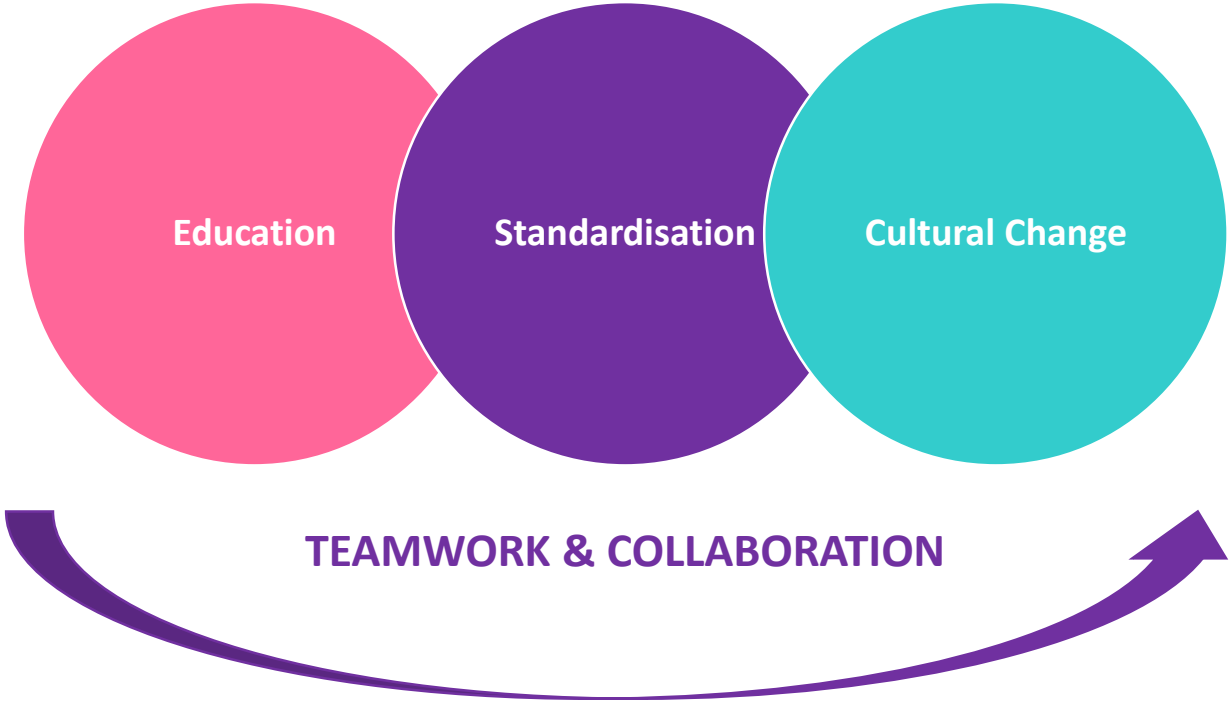
Results





2018	78%	51%
2021	85%	60%

Keys to Success



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Challenges

- Ownership of work & data across specialties
- Timing of administration of steroids
- Late presentation of preterm labour in extreme preterm population
- Covid challenges & impact on care

Scale Up & Spread

- The Preterm Bundle is fully embedded as routine practice.
- Shared & adapted for use with across Glasgow & multiple units throughout UK.
- Branding of all preterm optimisation work to ensure consistency in messaging.

Next Steps

- Introduction of Lifestart machine
- Building on perinatal collaboration – MDT champions for all elements of the bundle.
- Focus on other areas most in need of improvement – optimal steroid timing & maternal EBM

PRM NEO TEAM

NHS Greater Glasgow and Clyde

B4 34 branded pathway

Dr Colin Peters

Consultant Neonatologist
Clinical Director for Neonatal Services
NHS Greater Glasgow and Clyde

Improve What?

- BAPM Antenatal Optimisation
- MCQIC Preterm Perinatal Wellbeing Package
- MCQIC NEC
- MCQIC BPD

- All data presented is for the purpose of QI and is not fully ratified

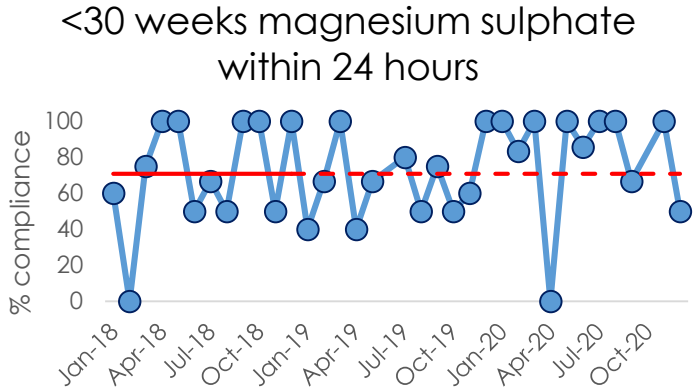
Focus on AO

- **S**teroids
- **T**ransfer to QEUH or PRM
- **A**ntibiotics
- **M**agnesium Sulphate
- **P**arent Discussion
- **E**valuate for Tocolysis
- **D**elivery Plan

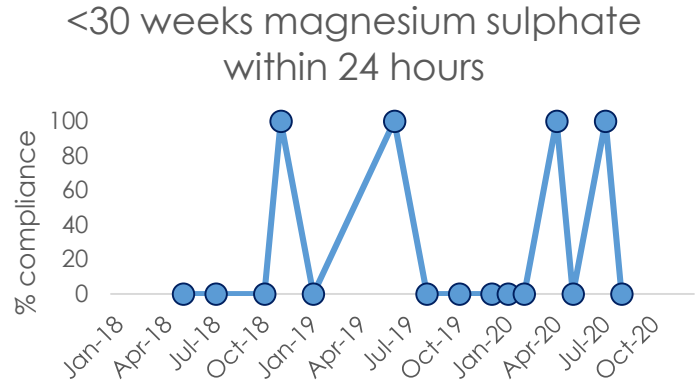
B4 34

The Preterm Bundle

Define the situation- Mg



RHC



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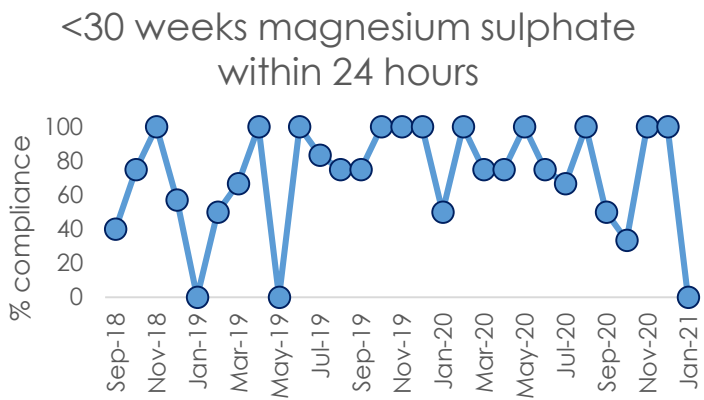

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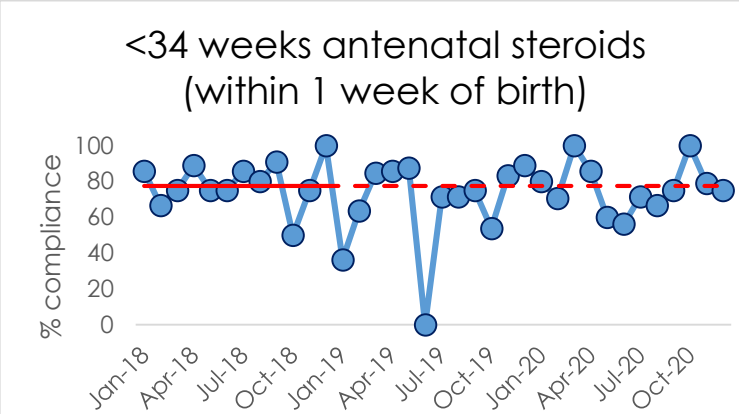
The Preterm Bundle

Define the situation - Steroids

<34



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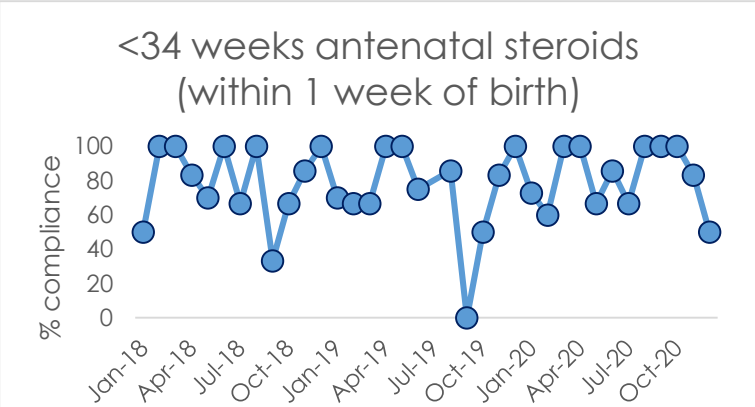

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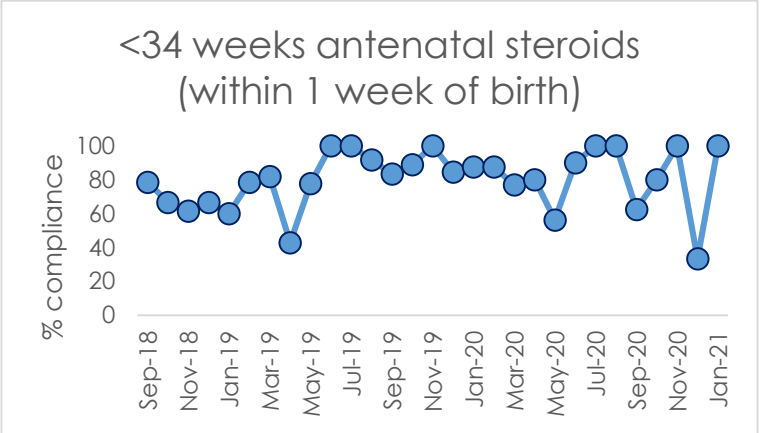

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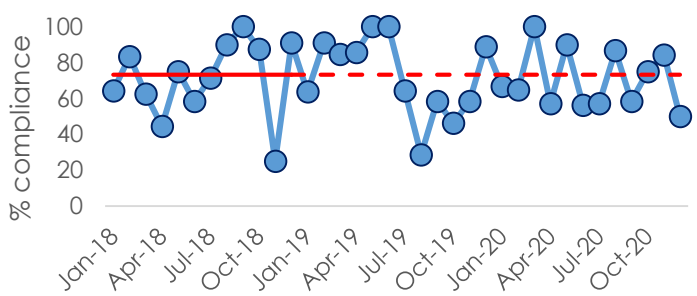
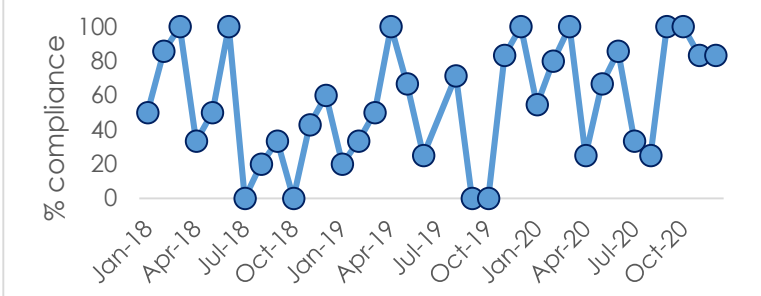
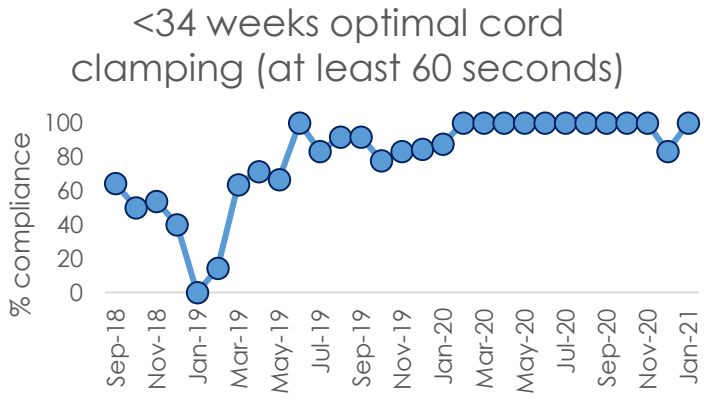
The Preterm Bundle

Define the situation - DCC







RHC

RAH

PRM

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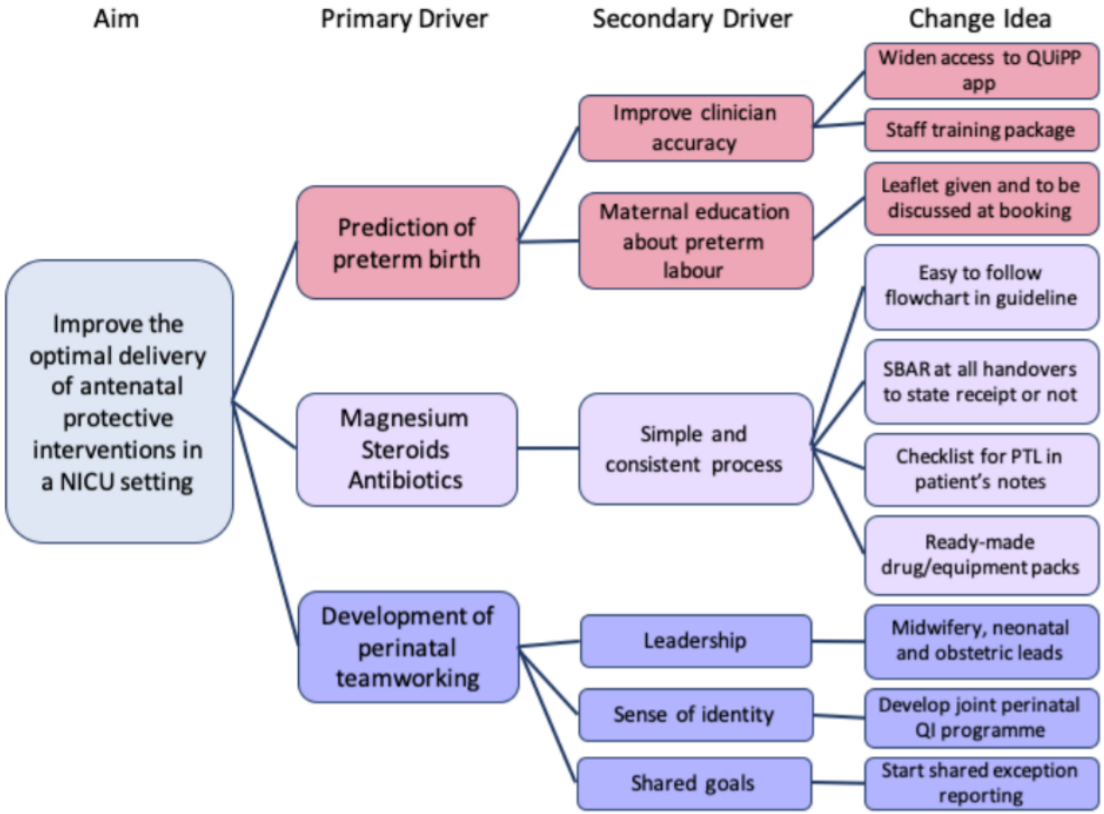
Driver Diagram



MCQIC Preterm Perinatal Wellbeing Package

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The Preterm Bundle

MCQIC
Preterm
Perinatal
Wellbeing
Package

B4 34

The Preterm Bundle

BAPM Antenatal Optimisation Toolkit

MCQIC Preterm Perinatal Wellbeing Package

<34

NICU Delivery

- Extreme preterm birth in a tertiary unit setting significantly improves survival and neurodevelopmental outcomes.

Antenatal STAMPED Optimisation

AIM

Optimally timed in-utero transfers should ensure infants <27 weeks are delivered in PRM or QEUH.

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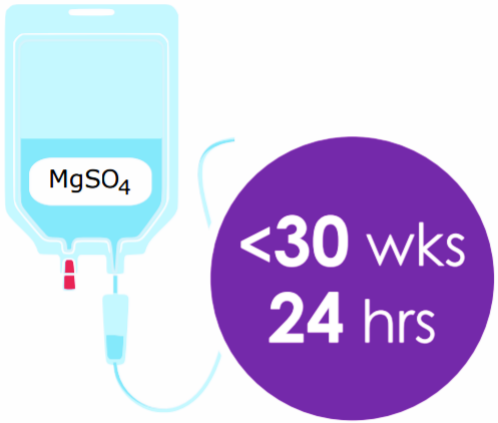
The Preterm Bundle

BAPM Antenatal Optimisation Toolkit

MCQIC Preterm Perinatal Wellbeing Package

<34

Magnesium Sulphate



- Reduces risk of cerebral palsy by 30%
- For every 37 women given magnesium sulphate, 1 fewer baby will develop cerebral palsy.

Antenatal STAMPED Optimisation

AIM

Mothers delivering **<30 weeks** should receive MgSo4 in the 24 hours before delivery. Give at least 4hrs before delivery for maximum efficacy. **Within 4 hours is still beneficial.**

NHS Greater Glasgow and Clyde

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The Preterm Bundle

BAPM Antenatal Optimisation Toolkit

MCQIC Preterm Perinatal Wellbeing Package

<34

Steroids

- Reduces mortality by 32%
- Reduces preterm lung disease, brain haemorrhage, necrotising enterocolitis (NEC) and sepsis.

Antenatal S.T.A.M.P.E.D. Optimisation

AIM

All mothers delivering **<34 weeks** should receive a full course of steroids, ideally in the **7 days before birth**, for maximum efficacy. **Benefits do not exceed 7days.**

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The Preterm Bundle

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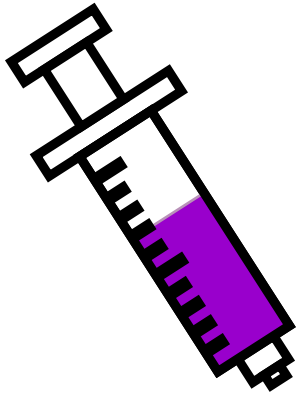
Antibiotics



<37 wks

- Antibiotics given at least 4h before birth reduces the risk of GBS sepsis from 12.5% to 1.6%

Antenatal STAMPED Optimisation

AIM

All women in established preterm labour receive intrapartum antibiotic prophylaxis to prevent early onset GBS, irrespective of whether they have ruptured amniotic membranes.

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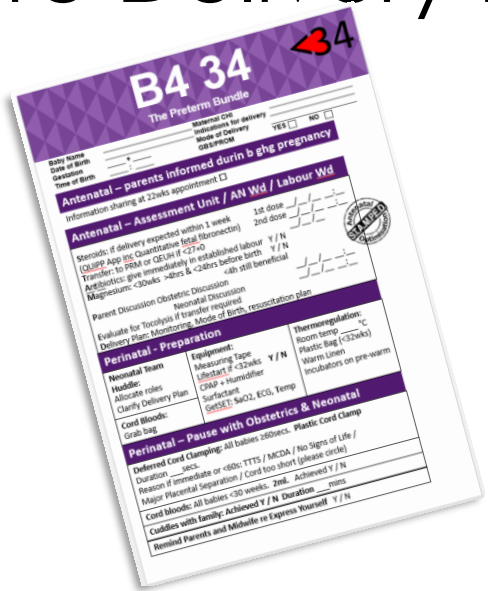
BAPM Antenatal Optimisation Toolkit

MCQIC Preterm Perinatal Wellbeing Package

<34

Pre Delivery Prompt



- A tool for midwifery, obstetric and neonatal teams to support the delivery of evidence based practice for babies born before 34 weeks

AIM

To use the prompt for all women who present before 34 weeks and at the time of all births before 34 weeks.

NHS Greater Glasgow and Clyde

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The Preterm Bundle

Optimal Cord Clamping

- Reduces mortality by 32%
- Reduces brain haemorrhage.
- Reduces the need for blood transfusion.

AIM

To achieve these full benefits, all babies <34 weeks should receive deferred cord clamping of a MINIMUM of 60 seconds.

BAPM Optimal Cord Management Toolkit

MCQIC Preterm Perinatal Wellbeing Package

NHS Greater Glasgow and Clyde

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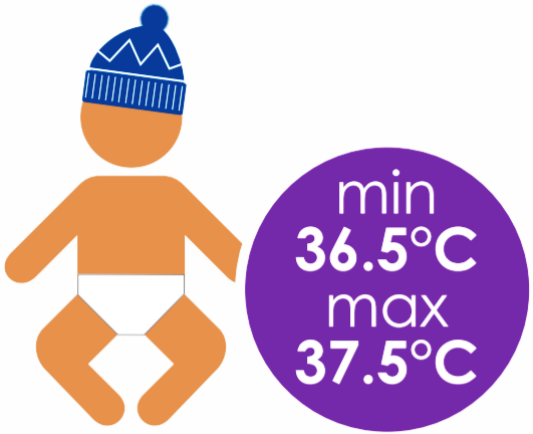
The Preterm Bundle

Maintain Temperature



- Hyper and hypothermia are strongly linked to poor outcomes.
- Every 1°C below 36.5°C increases mortality by up to 28%

AIM

Maintain temperature of 36.5°C - 37.5°C for all infants within an hour of life. Plastic bags for <31 wks. Consideration of warm towels and transwarmers.

MCQIC Preterm Perinatal Wellbeing Package

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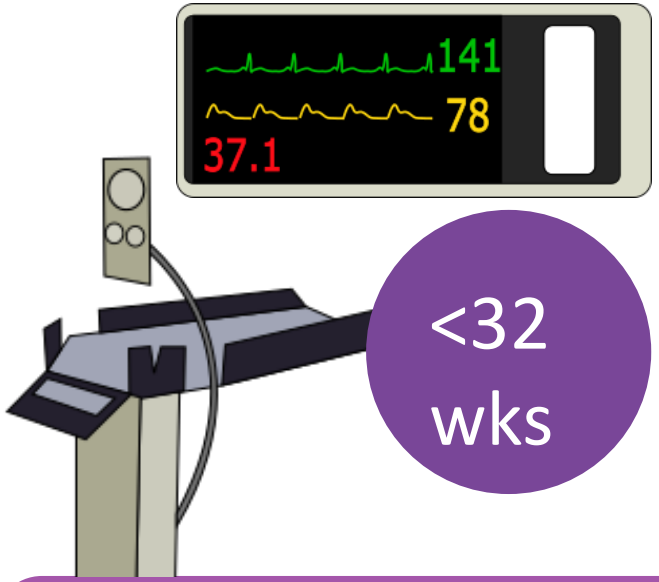
The Preterm Bundle

GetSET



- Use of saturation monitor, ECG leads and continuous temperature monitoring helps achieve goals.

AIM

To use **S**aturation, **E**CG and continuous **T**emperature monitoring for all babies <32 weeks.

MCQIC Preterm Perinatal Wellbeing Package

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The Preterm Bundle

<34

Mum's Expressed Breast Milk

- Early expressing helps establish maternal milk supply.
- Promotes gut maturation and feed tolerance.
- Reduces the risk of serious infection.

AIM

All infants **under 32 weeks** should receive maternal milk within the **first 24 hours** of life. Even better if within **6hrs.**

MCQIC Preterm Perinatal Wellbeing Package

NHS Greater Glasgow and Clyde

Express Yoursel f

unicef UNITED KINGDOM | THE BABY FRIENDLY INITIATIVE

MCQIC Preterm Perinatal Wellbeing Package

Express Yourself QI Group

Ensuring Preterm babies receive maternal breast milk

Maternal breast milk is liquid gold

Aim to improve babies exposure at all stages

The Express Yourself Team

Royal Hospital for Children and Queen Elizabeth Maternity Hospital, Glasgow

NHS Greater Glasgow and Clyde

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The Preterm Bundle

<34

Early Caffeine

- Improves respiratory outcomes by reducing apnoea and the need for ventilation.
- Reduction in premature lung disease.

AIM

All infants born under 30 weeks to receive caffeine within 72 hours of life.

MCQIC Preterm Perinatal Wellbeing Package

NHS Greater Glasgow and Clyde

PRETERM PERINATAL PACKAGE

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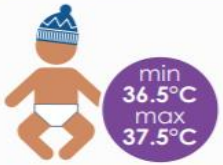

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EVERY PERSON EVERY TIME
SCOTTISH PATIENT SAFETY PROGRAMME
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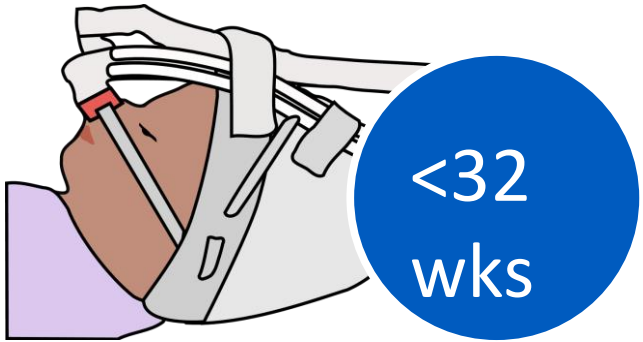
BPD

The Respiratory Bundle

Early Effective CPAP



- Early effective CPAP should be first line management in LWd.
- Apnoea in the first 15 mins with good HR can be managed with IPPV by mask.

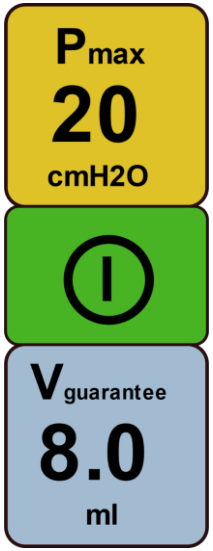
AIM

Apply CPAP by prongs or mask by 5 mins for all babies <32 weeks. (consider ETT if <25+0).

MCQIC BPD Reduction Package

NHS Greater Glasgow and Clyde

Volume Limited Ventilation



<32 wks

- Avoids volutrauma
- Reduces risk of developing BPD
- Choose parameters to minimise leak

AIM

Use Volume Limited ventilation throughout the first ventilated episode for all babies <32 weeks

Surfactant

>30% FiO_2

- FiO_2 >30% after 30m minimal handling
- Consider if increased breathing effort
- Consider if no steroids antenatally
- Surfactant for all ventilated & <32wks

AIM

Give surfactant **within 30mins** of a decision to administer. Give in labour ward if intubated.

Tests of Change

B4 34

The Preterm Bundle

MCQIC Preterm Perinatal Wellbeing Package

Poster en Route to Labour Ward

NHS Greater Glasgow and Clyde

Welcome to the Neonatal Unit

I have received ... my Bookbug bag ☐ Our NICU Journey ☐ Inky Feet ☐ Date _____

If my mum is expressing ..... 1st buccal colostrum given ☑ 2200hrs 6/12/21

Expressing Kit Given ☑ SG Shown how to use breast pump ☑ UNICEF Expressing Assessment ☐

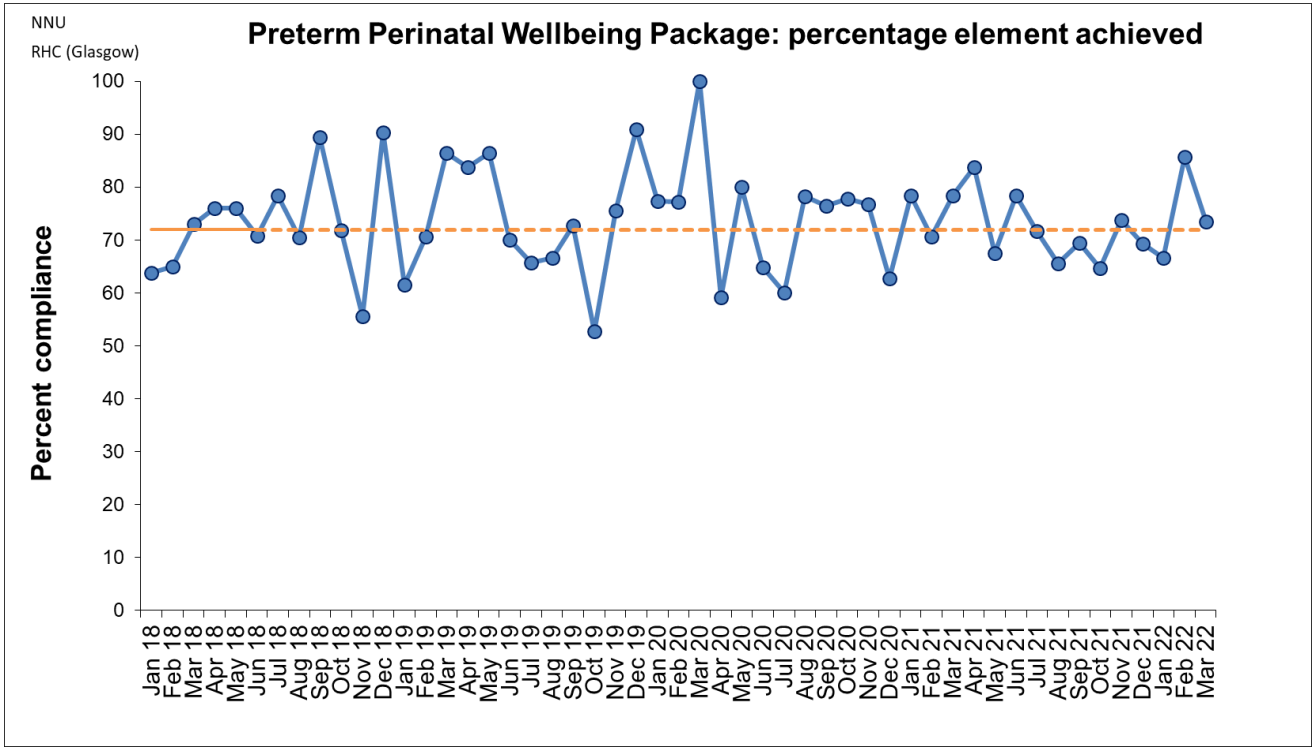
A loan pump and information on using it ☑ SG 7/12/21 How to store and warm my milk ☑ MA at present

Newborn Screening ... I have a prompt card on my cot ☑

B4 34

The Preterm Bundle

Results – Element compliance



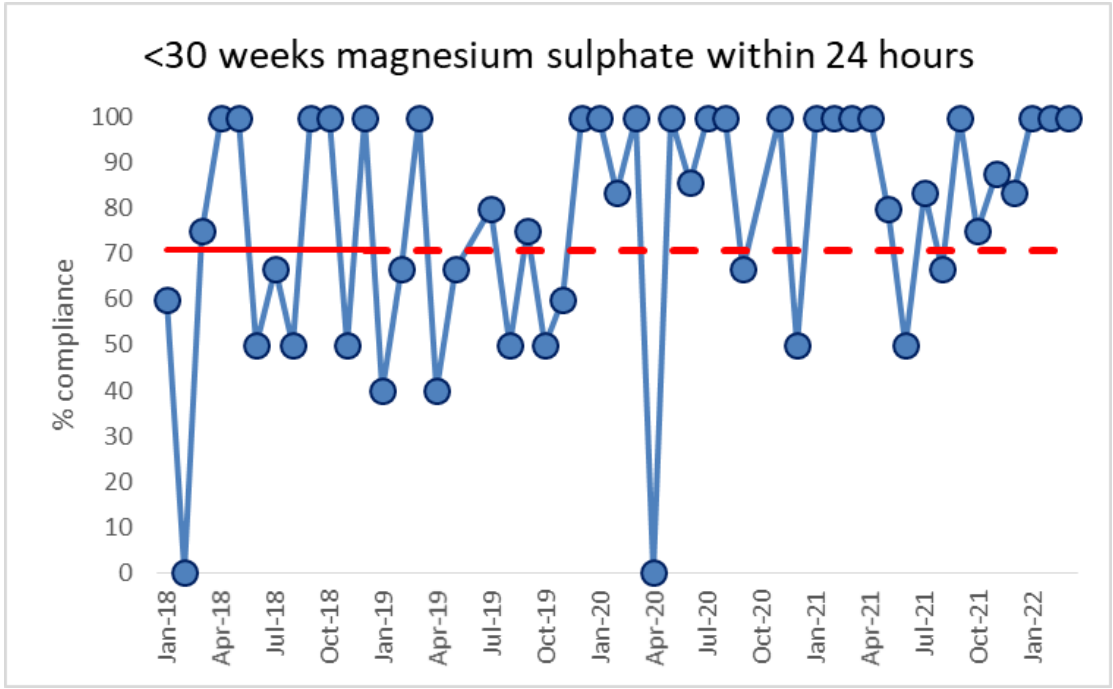
MCQIC Preterm Perinatal Wellbeing Package

NHS Greater Glasgow and Clyde

B4 34

The Preterm Bundle

Results - Mg



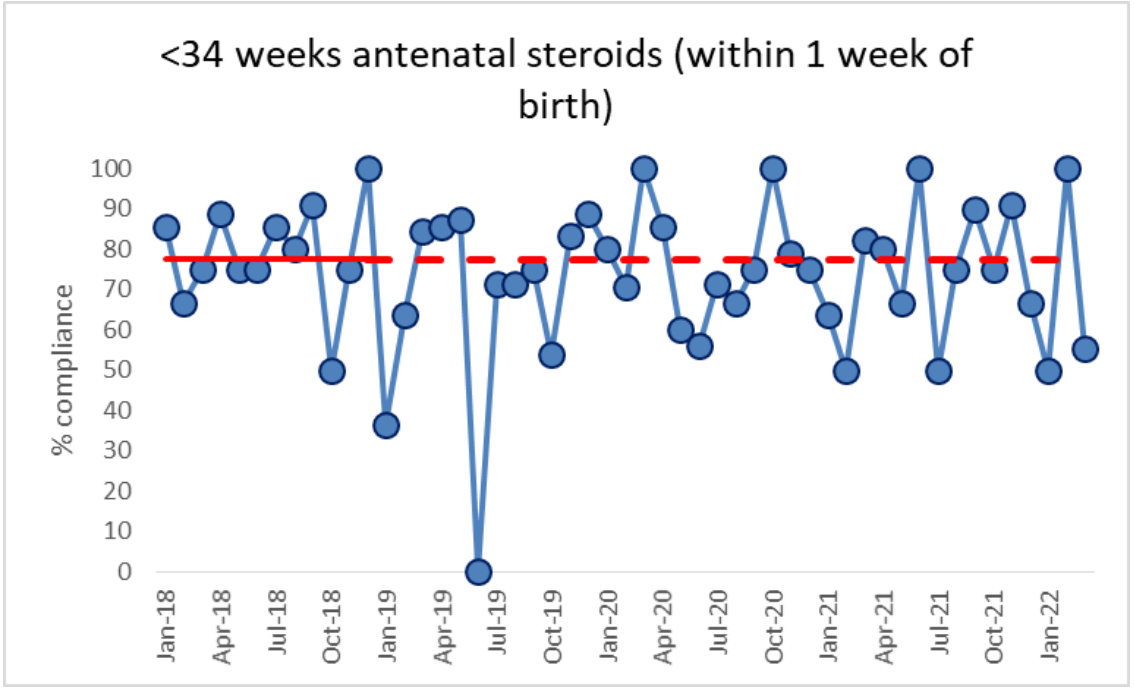
MCQIC Preterm Perinatal Wellbeing Package

NHS Greater Glasgow and Clyde

B4 34

The Preterm Bundle

Results - Steroids



MCQIC Preterm Perinatal Wellbeing Package

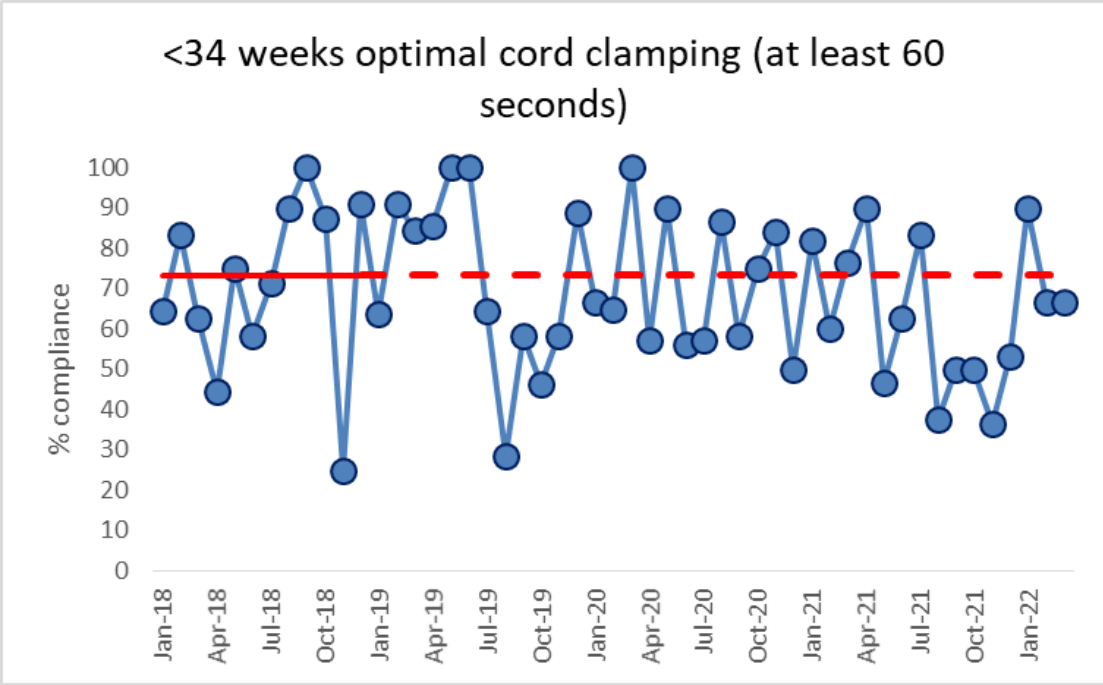
NHS Greater Glasgow and Clyde

B4 34

The Preterm Bundle

Results - OCM

<34



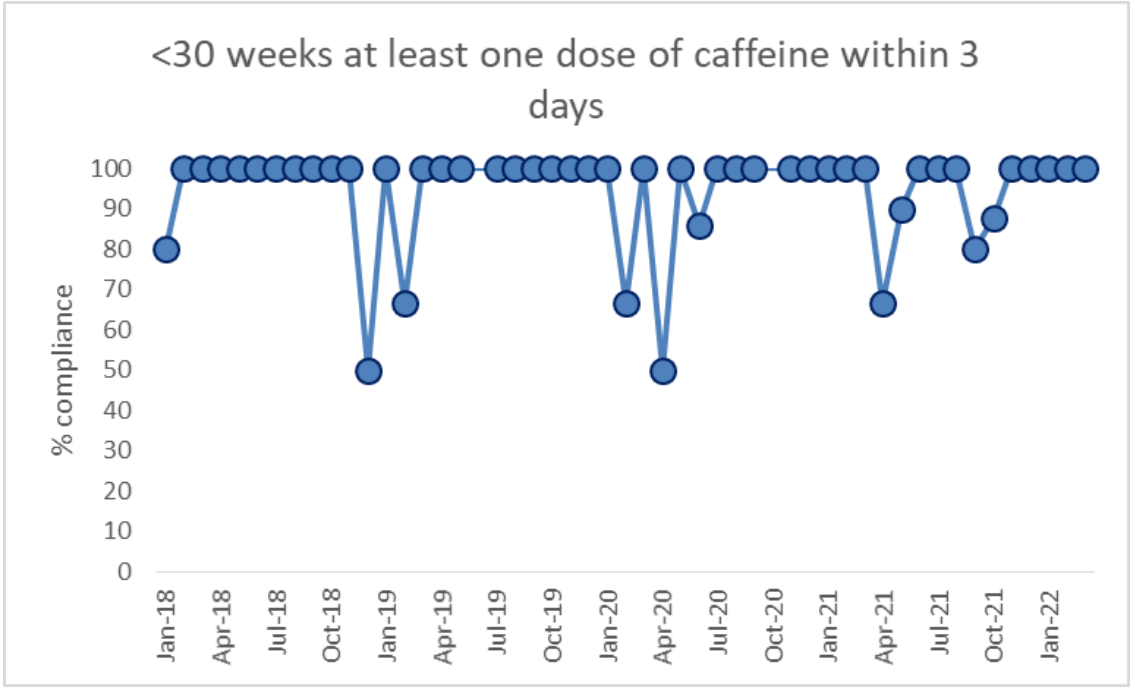
MCQIC Preterm Perinatal Wellbeing Package

NHS Greater Glasgow and Clyde

B4 34

The Preterm Bundle

Results - Caffeine



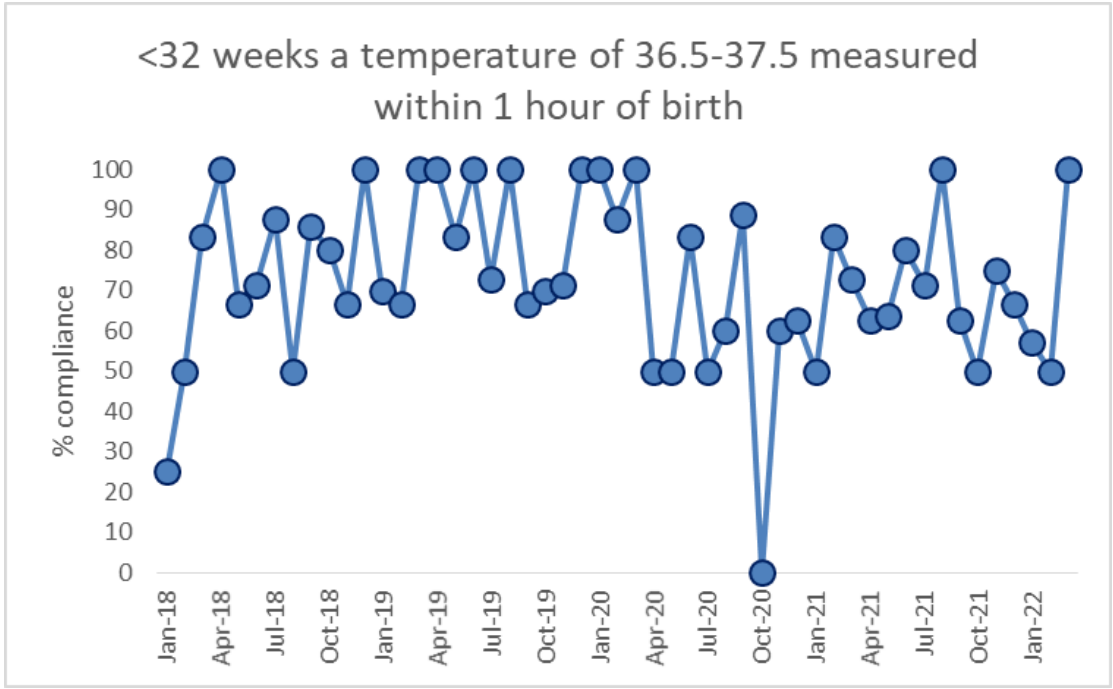
MCQIC Preterm Perinatal Wellbeing Package

NHS Greater Glasgow and Clyde

B4 34

The Preterm Bundle

Results - Temp



MCQIC Preterm Perinatal Wellbeing Package

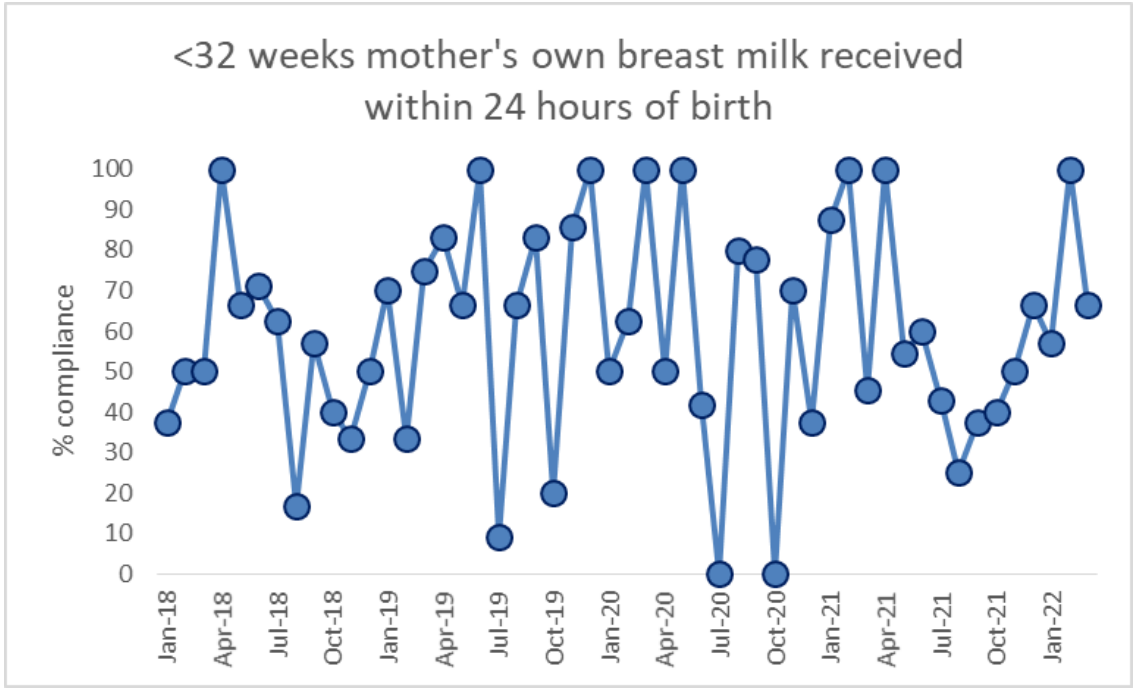
<34

NHS Greater Glasgow and Clyde

B4 34

The Preterm Bundle

Results – MEBM



MCQIC Preterm Perinatal Wellbeing Package

NHS Greater Glasgow and Clyde

Next steps

- Close working with obstetrics re steroids
- Reinvigorate GetSET
  - Focus on OCM & Temperature
- Continued Express Yourself work
  - Better system for data collection
- Neurological Injury group

Presenter introduction

Dr Kathleen Brown

Consultant

NHS Tayside

Establishing a Perinatal Team

- Recognised benefit of establishing joint working
- Recruiting of enthusiastic team members from neonatal, midwifery, obstetric and theatre staff
- Establishing goals
- Spreading the word
- Maintaining momentum

Tayside Perinatal Team

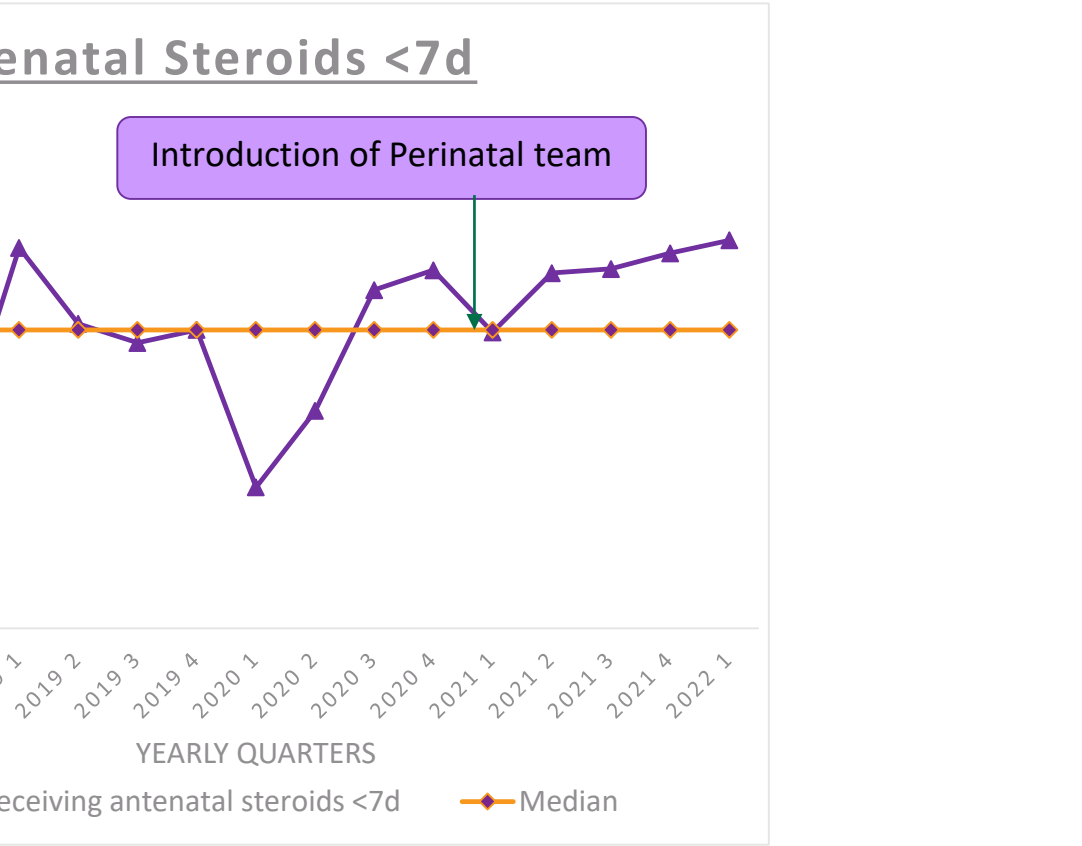
Successes

- Dr Lauren Shaw has joined our team (bonus in itself!) – comes with strong QI background and enthusiasm and collaboration with Dr Mary Smith in obstetrics
- Regular team meetings via Teams to establish goals and how we can achieve them best together
- Practical joint teaching sessions with role play (and very amenable colleagues) and engaging with midwifery education days

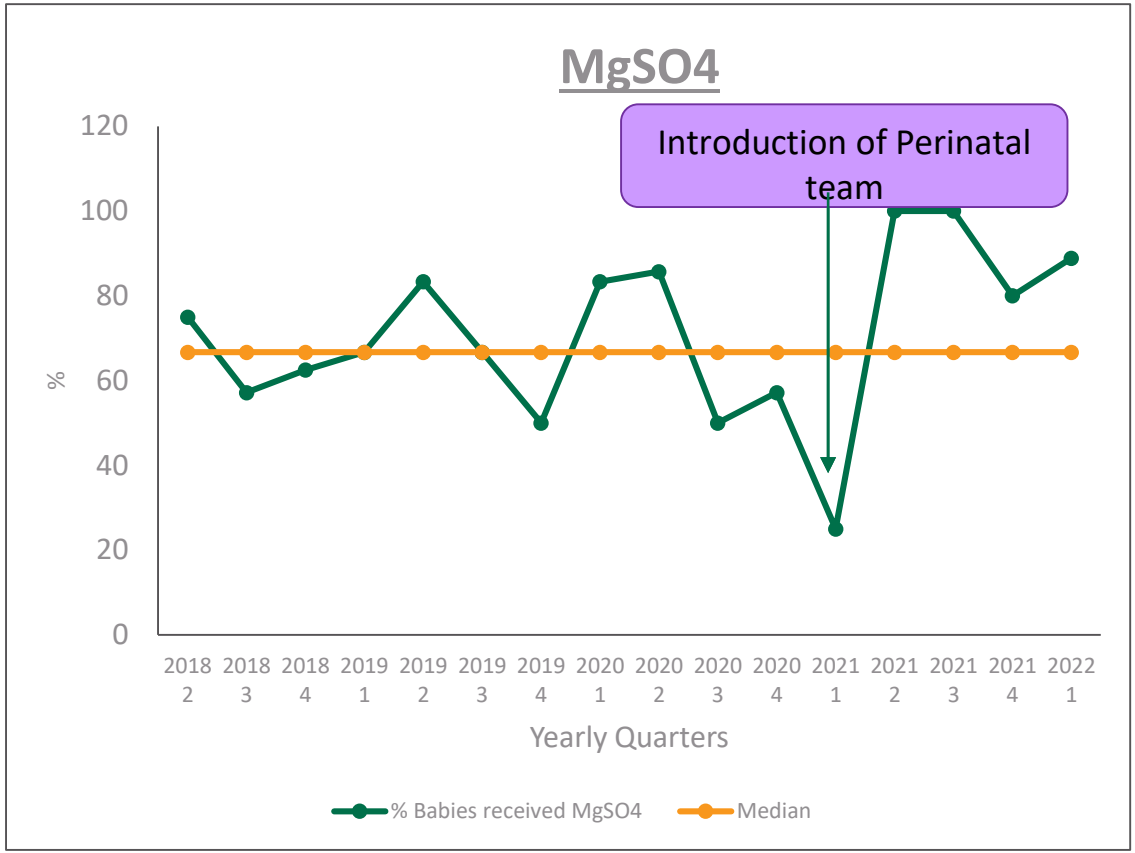
Successes

- Growing feeling of “team effort” across specialities (joining theatre pause)
- Noticeable improvement in areas where obstetric input more important (steroids, MgSO4)
- Improved “buy in” from midwifery and obstetric team with achieving optimal cord clamping

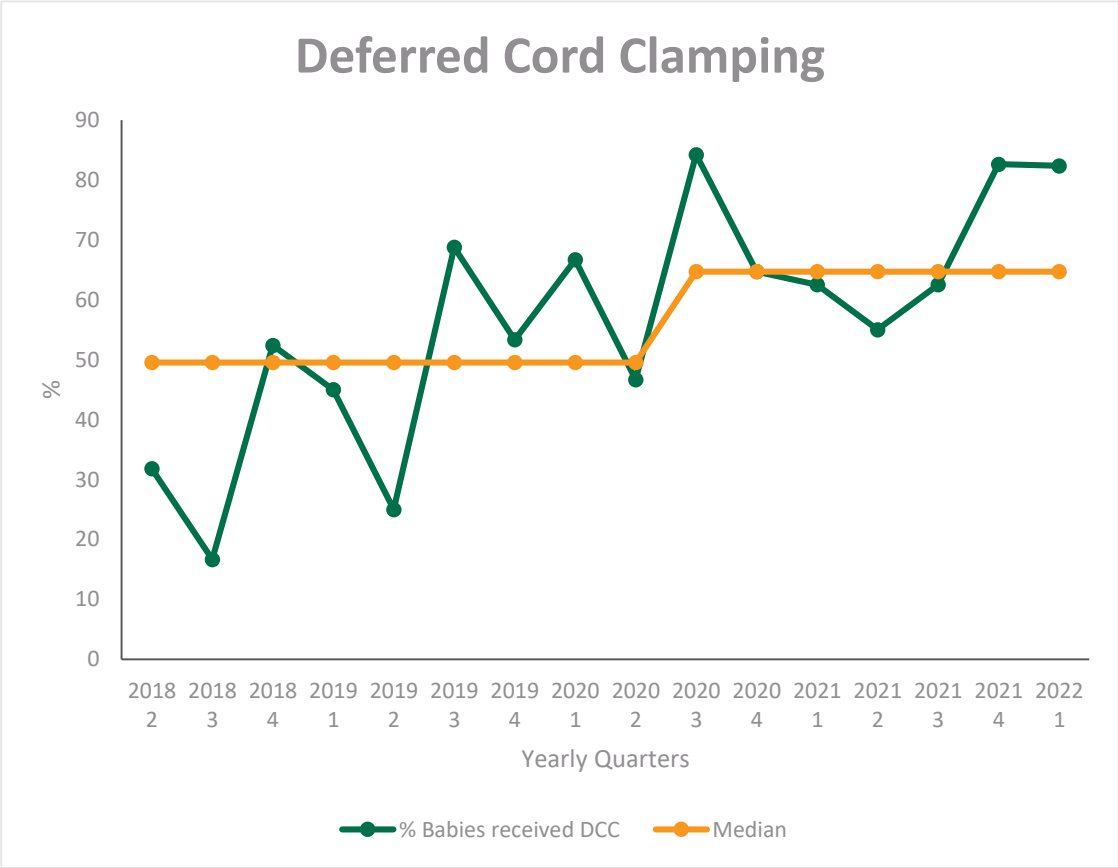
Successes


Antenatal Steroids <7d
Introduction of Perinatal team
100
90
80
70
60
50
40
30
20
10
0
%
2018 1
2018 2
2018 3
2018 4
2019 1
2019 2
2019 3
2019 4
2020 1
2020 2
2020 3
2020 4
2021 1
2021 2
2021 3
2021 4
2022 1
YEARLY QUARTERS
% of babies receiving antenatal steroids <7d
Median

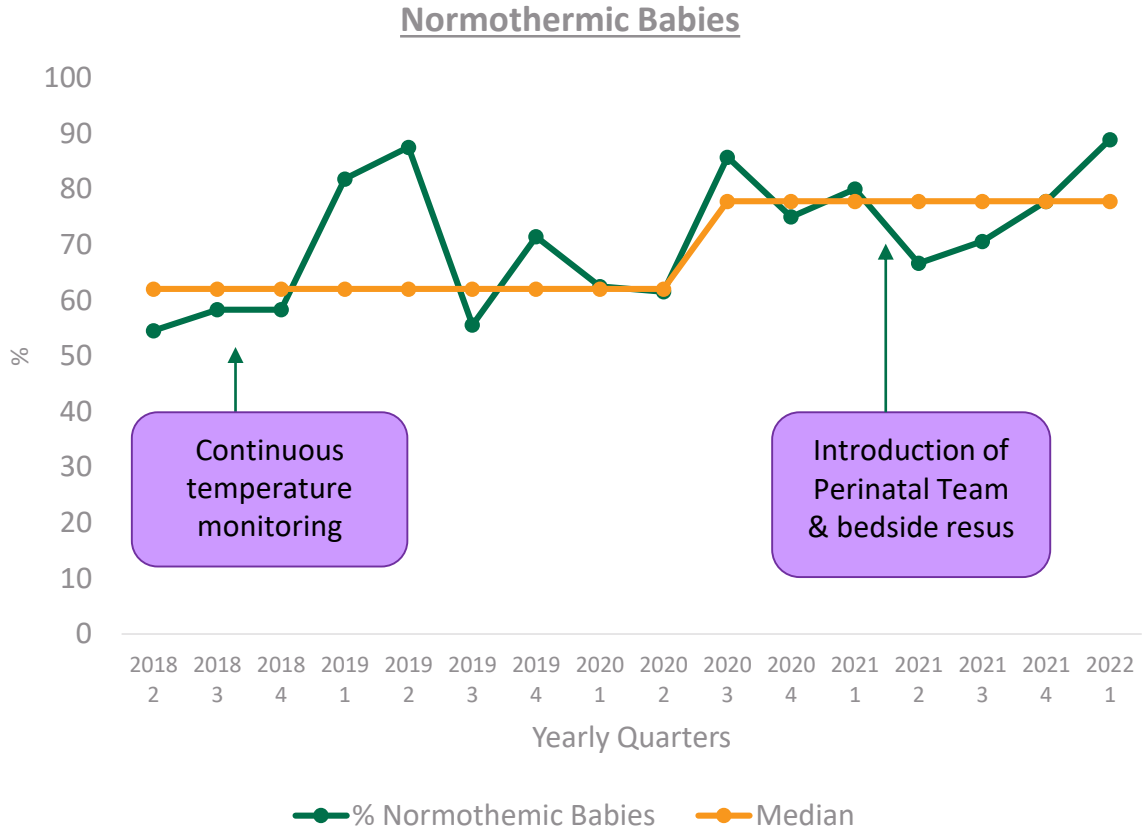
Successes


MgSO4
Introduction of Perinatal team
120
100
80
60
40
20
0
%
2018 2
2018 3
2018 4
2019 1
2019 2
2019 3
2019 4
2020 1
2020 2
2020 3
2020 4
2021 1
2021 2
2021 3
2021 4
2022 1
Yearly Quarters
% Babies received MgSO4
Median

Successes


Deferred Cord Clamping
90
80
70
60
50
40
30
20
10
0
%
2018 2
2018 3
2018 4
2019 1
2019 2
2019 3
2019 4
2020 1
2020 2
2020 3
2020 4
2021 1
2021 2
2021 3
2021 4
2022 1
Yearly Quarters
% Babies received DCC
Median

Successes


Normothermic Babies
100
90
80
70
60
50
40
30
20
10
0
%
Continuous temperature monitoring
Introduction of Perinatal Team & bedside resus
2018 2
2018 3
2018 4
2019 1
2019 2
2019 3
2019 4
2020 1
2020 2
2020 3
2020 4
2021 1
2021 2
2021 3
2021 4
2022 1
Yearly Quarters
% Normothemic Babies
Median

Challenges

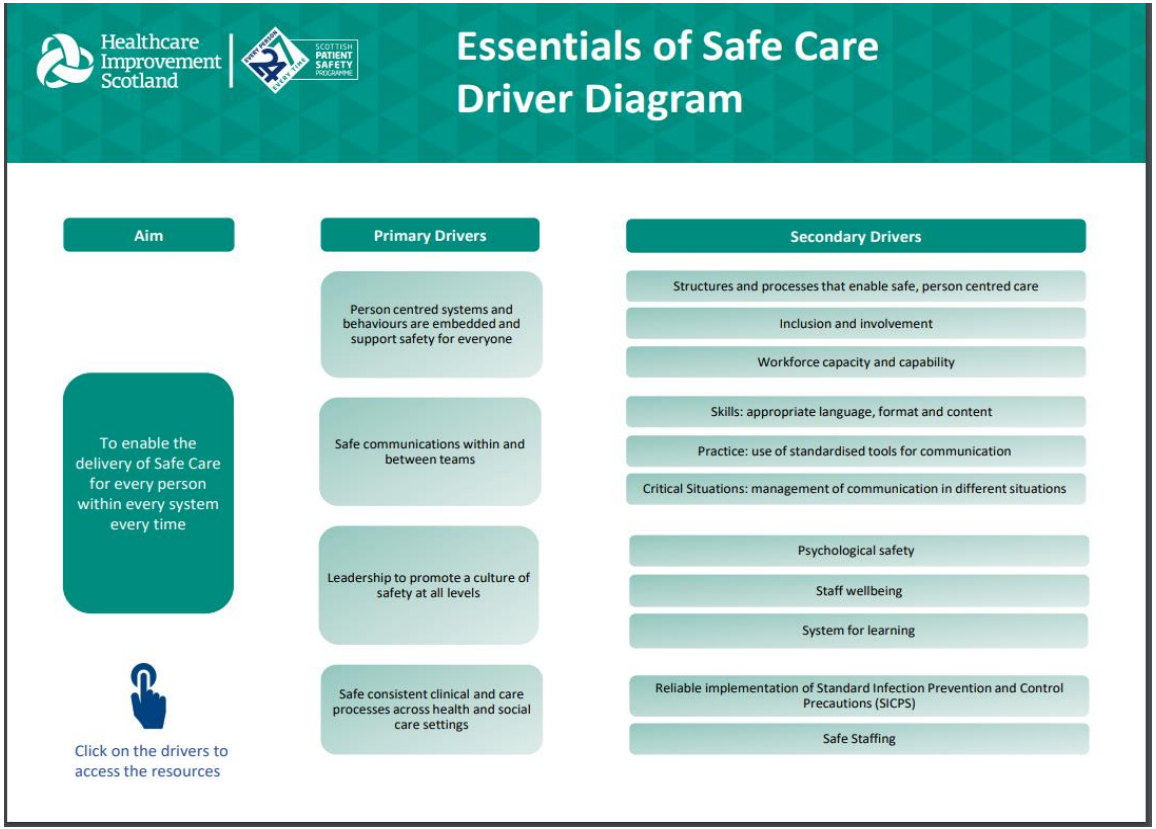
- Initial engagement across teams
- Momentum of enthusiasm for change
- Establishing importance for new staff
- Initial breast milk availability/ documentation

Next steps

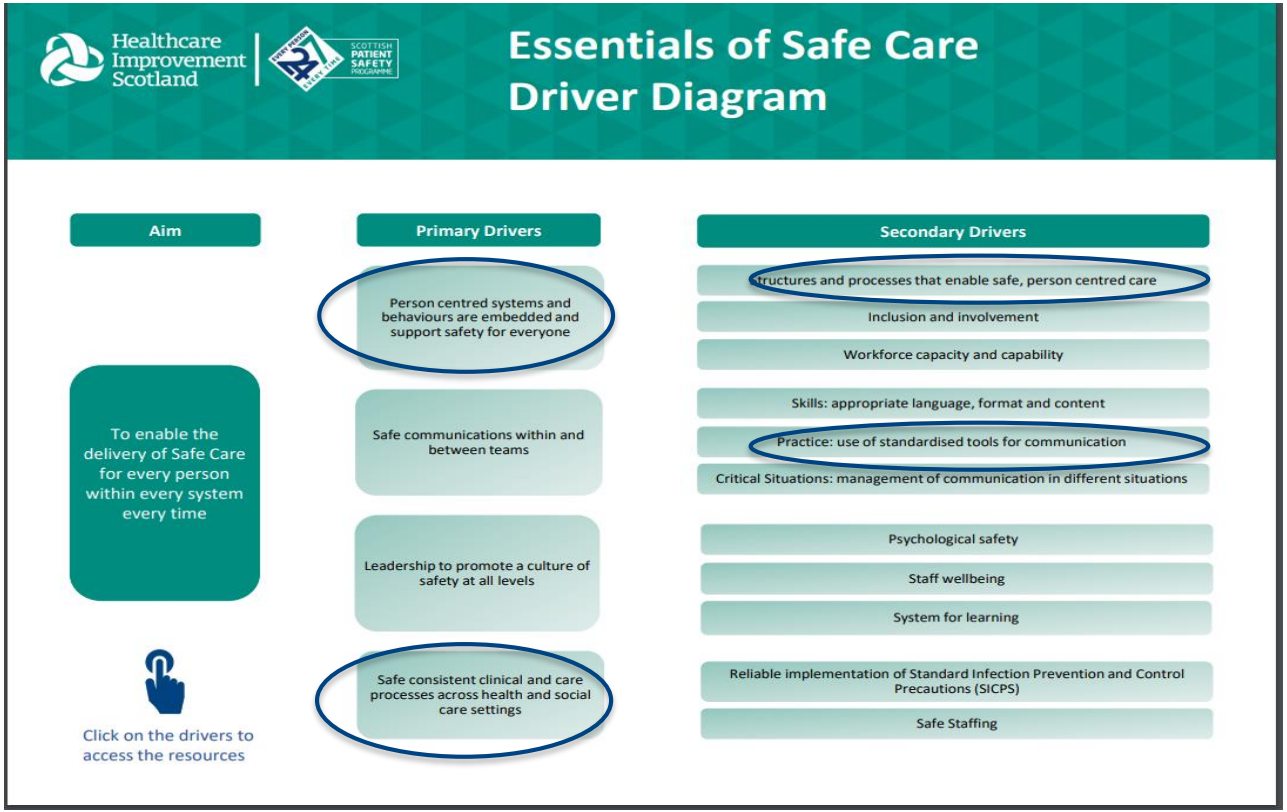
- Continuing momentum in enthusiasm for in room stabilisation through teaching and simulation (now embedded in weekly teaching)
- Continuing and growing joint working with maternity and midwifery staff
- Working further with infant feeding team to improve overall compliance with EBM <24 hours

MCQIC Neonatal Care
Next Steps

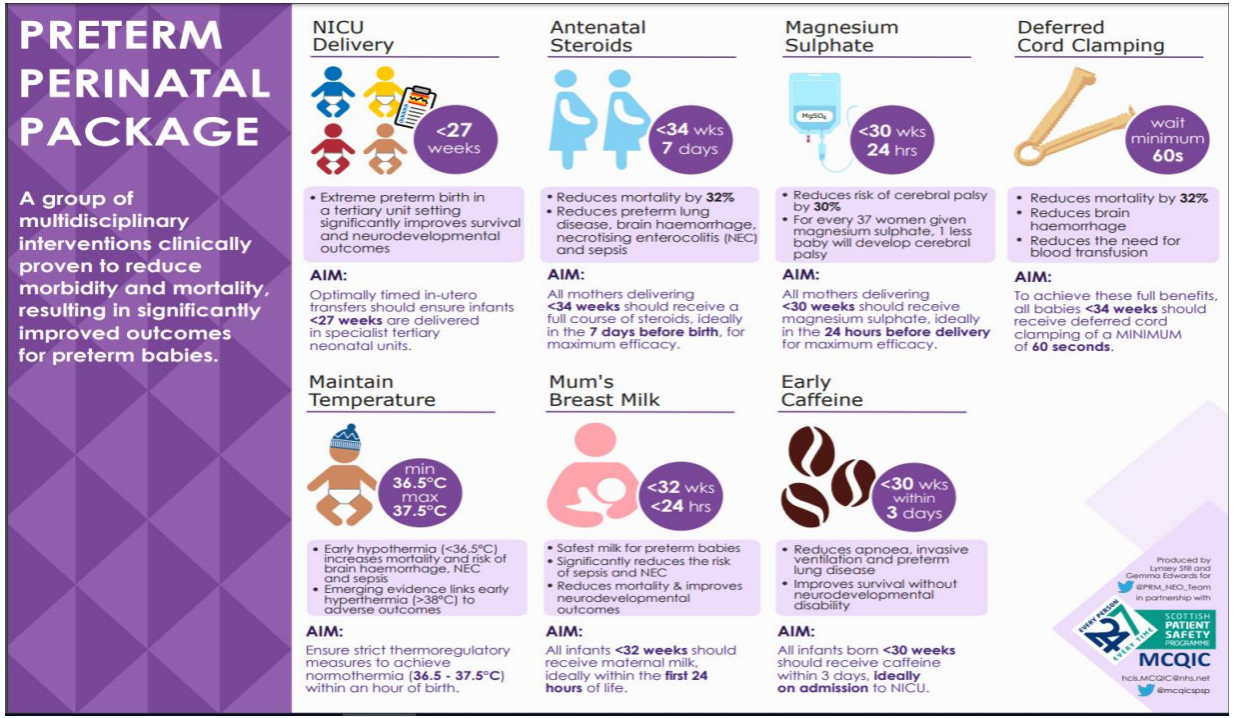
Essentials of Safe Care



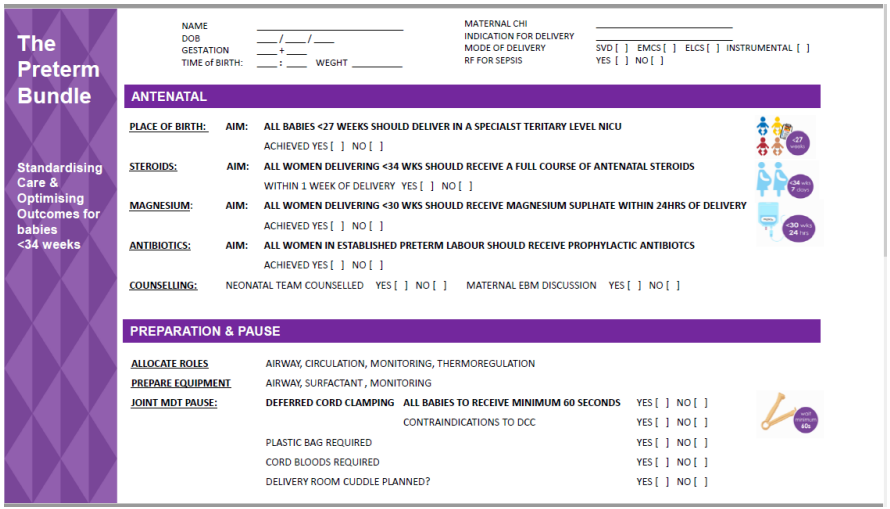
Creation of QI resources



Educational resources



MCQIC Preterm Bundle



The Preterm Bundle

Standardising Care & Optimising Outcomes for babies <34 weeks

NAME _____
DOB ___/___/___
GESTATION ___+___
TIME of BIRTH: ___:___ WEGHT _____

MATERNAL CHI _____
INDICATION FOR DELIVERY _____
MODE of DELIVERY SVD [ ] EMCS [ ] ELCS [ ] INSTRUMENTAL [ ]
RF FOR SEPSIS YES [ ] NO [ ]

ANTENATAL

PLACE OF BIRTH: AIM: ALL BABIES <27 WEEKS SHOULD DELIVER IN A SPECIALST TERITARY LEVEL NICU
ACHIEVED YES [ ] NO [ ]

STEROIDS: AIM: ALL WOMEN DELIVERING <34 WKS SHOULD RECEIVE A FULL COURSE OF ANTENATAL STEROIDS
WITHIN 1 WEEK OF DELIVERY YES [ ] NO [ ]

MAGNESIUM: AIM: ALL WOMEN DELIVERING <30 WKS SHOULD RECEIVE MAGNESIUM SUPLHATE WITHIN 24HRS OF DELIVERY
ACHIEVED YES [ ] NO [ ]

ANTIBIOTICS: AIM: ALL WOMEN IN ESTABLISHED PRETERM LABOUR SHOULD RECEIVE PROPHYLACTIC ANTIBIOTCS
ACHIEVED YES [ ] NO [ ]

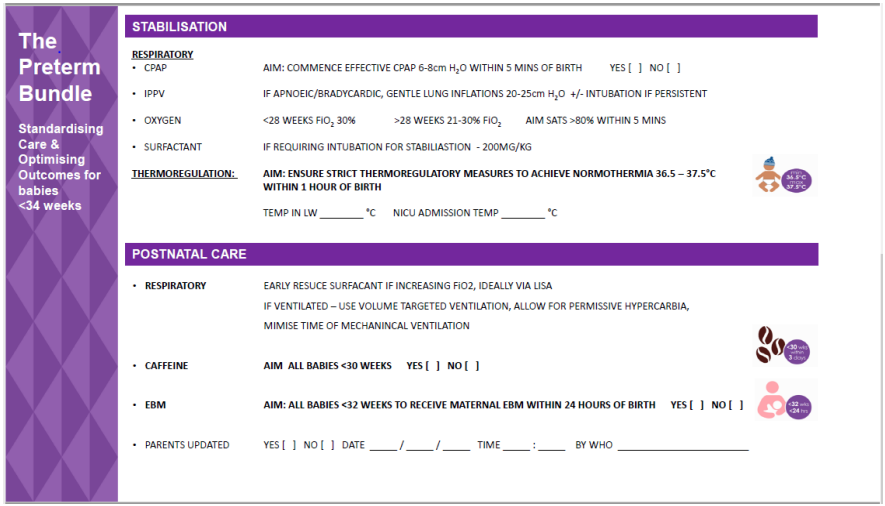
COUNSELLING: NEONATAL TEAM COUNSELLED YES [ ] NO [ ] MATERNAL EBM DISCUSSION YES [ ] NO [ ]

PREPARATION & PAUSE

ALLOCATE ROLES AIRWAY, CIRCULATION, MONITORING, THERMOREGULATION

PREPARE EQUIPMENT AIRWAY, SURFACTANT , MONITORING

JOINT MDT PAUSE:
DEFERRED CORD CLAMPING ALL BABIES TO RECEIVE MINIMUM 60 SECONDS YES [ ] NO [ ]
CONTRAINDICATIONS TO DCC YES [ ] NO [ ]
PLASTIC BAG REQUIRED YES [ ] NO [ ]
CORD BLOODS REQUIRED YES [ ] NO [ ]
DELIVERY ROOM CUDDLE PLANNED? YES [ ] NO [ ]



The Preterm Bundle

Standardising Care & Optimising Outcomes for babies <34 weeks

STABILISATION

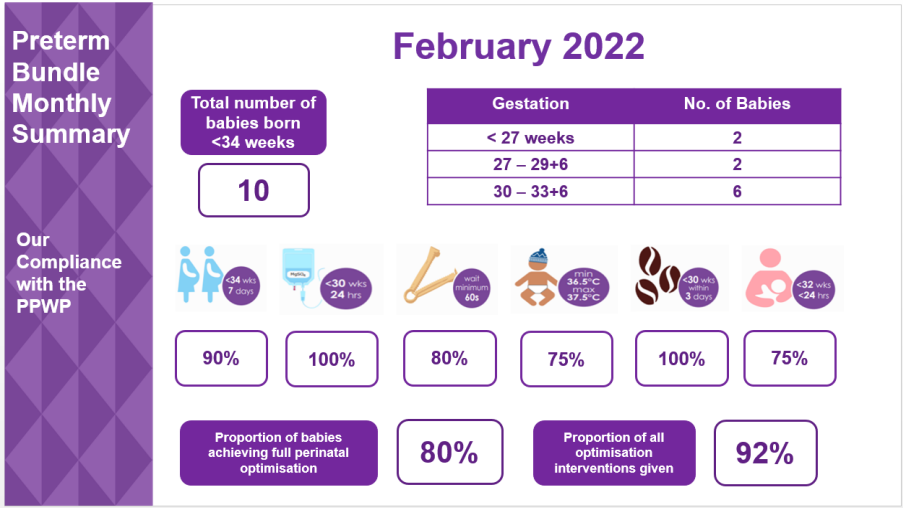
RESPIRATORY
- CPAP — AIM: COMMENCE EFFECTIVE CPAP 6-8cm H_2O WITHIN 5 MINS OF BIRTH YES [ ] NO [ ]
- IPPV — IF APNOEIC/BRADYCARDIC, GENTLE LUNG INFLATIONS 20-25cm H_2O +/- INTUBATION IF PERSISTENT
- OXYGEN — <28 WEEKS FiO_2 30% >28 WEEKS 21-30% FiO_2 AIM SATS >80% WITHIN 5 MINS
- SURFACTANT — IF REQUIRING INTUBATION FOR STABILIASTION - 200MG/KG

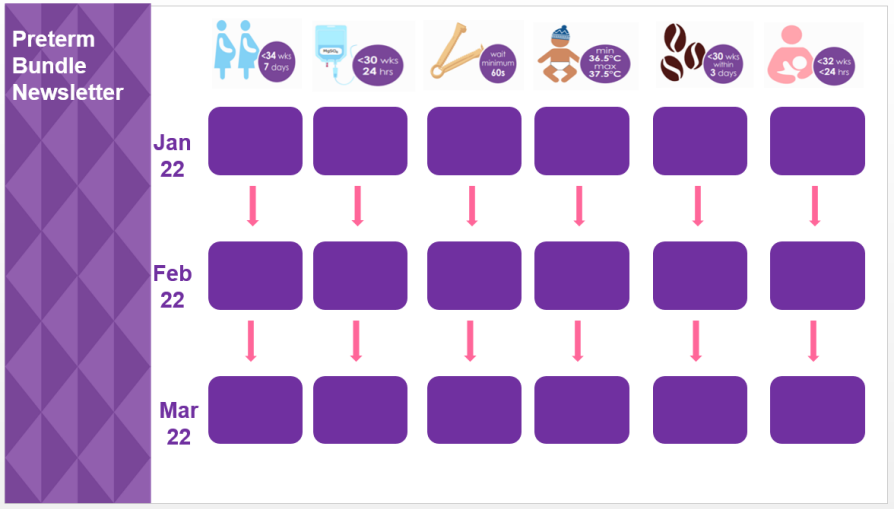
THERMOREGULATION: **AIM: ENSURE STRICT THERMOREGULATORY MEASURES TO ACHIEVE NORMOTHERMIA 36.5 – 37.5°C WITHIN 1 HOUR OF BIRTH**
TEMP IN LW _____ °C NICU ADMISSION TEMP _____ °C

POSTNATAL CARE

- **RESPIRATORY** — EARLY RESUCE SURFACANT IF INCREASING FiO2, IDEALLY VIA LISA
  IF VENTILATED – USE VOLUME TARGETED VENTILATION, ALLOW FOR PERMISSIVE HYPERCARBIA,
  MIMISE TIME OF MECHANINCAL VENTILATION
- **CAFFEINE** — **AIM ALL BABIES <30 WEEKS YES [ ] NO [ ]**
- **EBM** — **AIM: ALL BABIES <32 WEEKS TO RECEIVE MATERNAL EBM WITHIN 24 HOURS OF BIRTH YES [ ] NO [ ]**
- PARENTS UPDATED YES [ ] NO [ ] DATE ____/____/____ TIME ____:____ BY WHO _____

PPWP Feedback Tools





Key Resources

ihub.scot/spsp

ihub.scot/TheEoSC

@ihubscot #spsp247 #TheEoSC

@mcqicspsp

his.pspcontact@nhs.scot

his.mcqic@nhs.scot

Thank you


EVERY PERSON
EVERY TIME
SCOTTISH
PATIENT
SAFETY
PROGRAMME