Quality Improvement Collaborative Project

KADE MONDEH
LEAD PRACTICE DEVELOPMENT MIDWIFE
BARTS HEALTH
SUPERVISOR OF MIDWIVES
FELLOW HEA

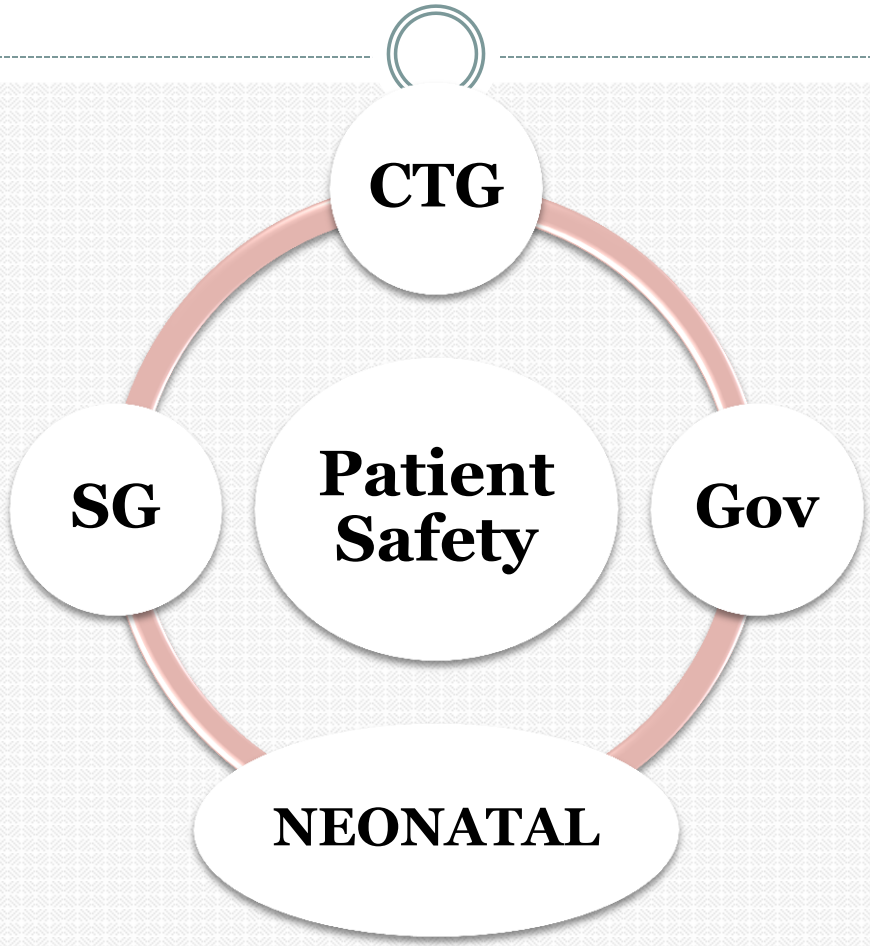
AIM of this Session

- **Aim**: To impact of an improvement project in deteriorating neonates at a local trust.
- **Objectives**
- Establish the most likely cause
- Identify the correct use of the assessment tool
- Identify Escalation policies
- Clarify care plans and ongoing management

Background

- BH is one of the largest centers for Maternity services within Europe.
- The Maternity services offers antenatal care for 20,200 women per annum and delivered 17,912 babies (Including twins) in 2014
- The area it covers within Tower Hamlets, Newham and Waltham Forest and neighboring boroughs have some of the highest levels of deprivation in the united Kingdom and therefore some of the most complex births.
- One of the Units runs tertiary services for women and babies through Fetal Medicine and level 3 neonatal care is one of the largest neonatal unit in London

MERGER OF 3 HOSPITALS in 2012



Background to the project

- Sudden and unexpected postnatal collapse (SUPC) of a healthy new-born infant is a very rare event, however, when it does occur, it carries a high risk of mortality and neuro-disability in survivors.
- Estimated incidence of (SUPC) of a presumably healthy neonate after birth differs widely.
- British Association of Perinatal medicine (2011) reports an incidence of 0.03-0.08/1000 live births with an incidence of 1:20,000 in the first 12 hours-7 days within the UK. Herlenius & Kuhn (2013) in their study give an estimated incidence of 0.026 – 1.33/1000 births.

SUPC -Definition

S

- A term infant who suffers a “sudden unexpected collapse in the post natal period who was:
- Well at birth with normal Apgars ≥ 8 at 5 minutes and deemed well enough to have routine postnatal care however

UP

- Collapses unexpectedly (i.e) discovered in a state of cardio-respiratory extremes such that resuscitation with Intermittent Positive Pressure Ventilation(IPPV) is required and,

C

- Collapses within the first 12-36 hours of life, and
- Who either dies or goes to require intensive care in NICU.

Evidence at Local Trust

- The estimated incidence of Sudden and unexpected postnatal collapse (SUPC) at local trust based on data in 2013 was 0.71 per 1000 births.
- In 2013, in the space of 6 months we had 9 SUPC .
- The need to investigate the occurrence of SUPC and identify ways that this can be reduced and minimized was a priority.

AIM of The Project

- **To reduce the number of sudden unexpected postnatal collapse by 70% in term babies on the postnatal wards in the first week of life by December 2014.**

Project Membership

- **Co-ordinators** *(Audit and Practice Development Midwives, Project Manager)*
- **Neonatologist** *(Consultant and Specialist Registrar)*
- **Operational *Leads*** *(Midwives, Maternity Support Workers and Midwives in Transitional Care nurses)*

PROJECT SCOPE

- **<u>>37 /40 weeks gestation with one or more Identified risk factors:</u>**

-Babies with Meconium stained liquor at delivery.

-Babies whose mothers have (Prolonged Rupture of Membranes)

-Babies whose mothers have had risk factors for(Group B Strep) GBS

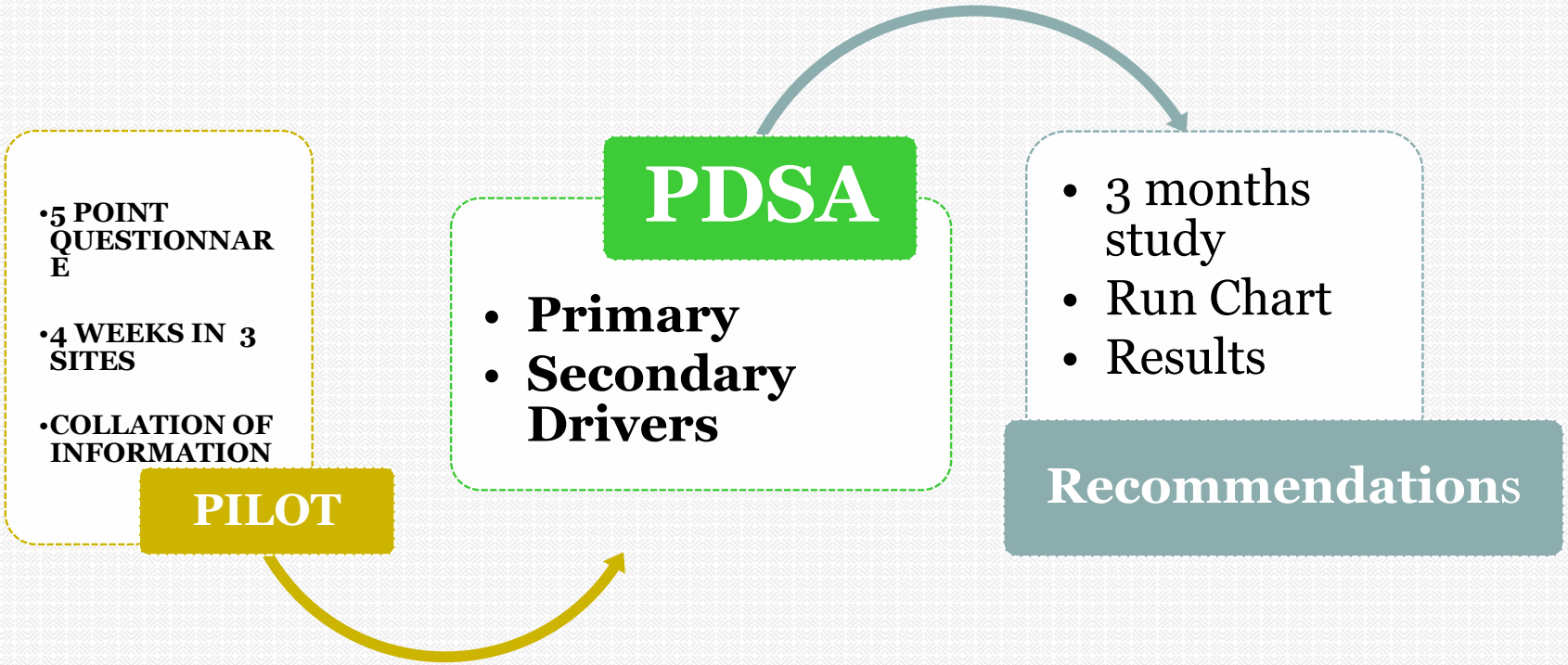
-Babies who are small for gestational age (SGA)

-Babies who are born to gestational diabetic mothers

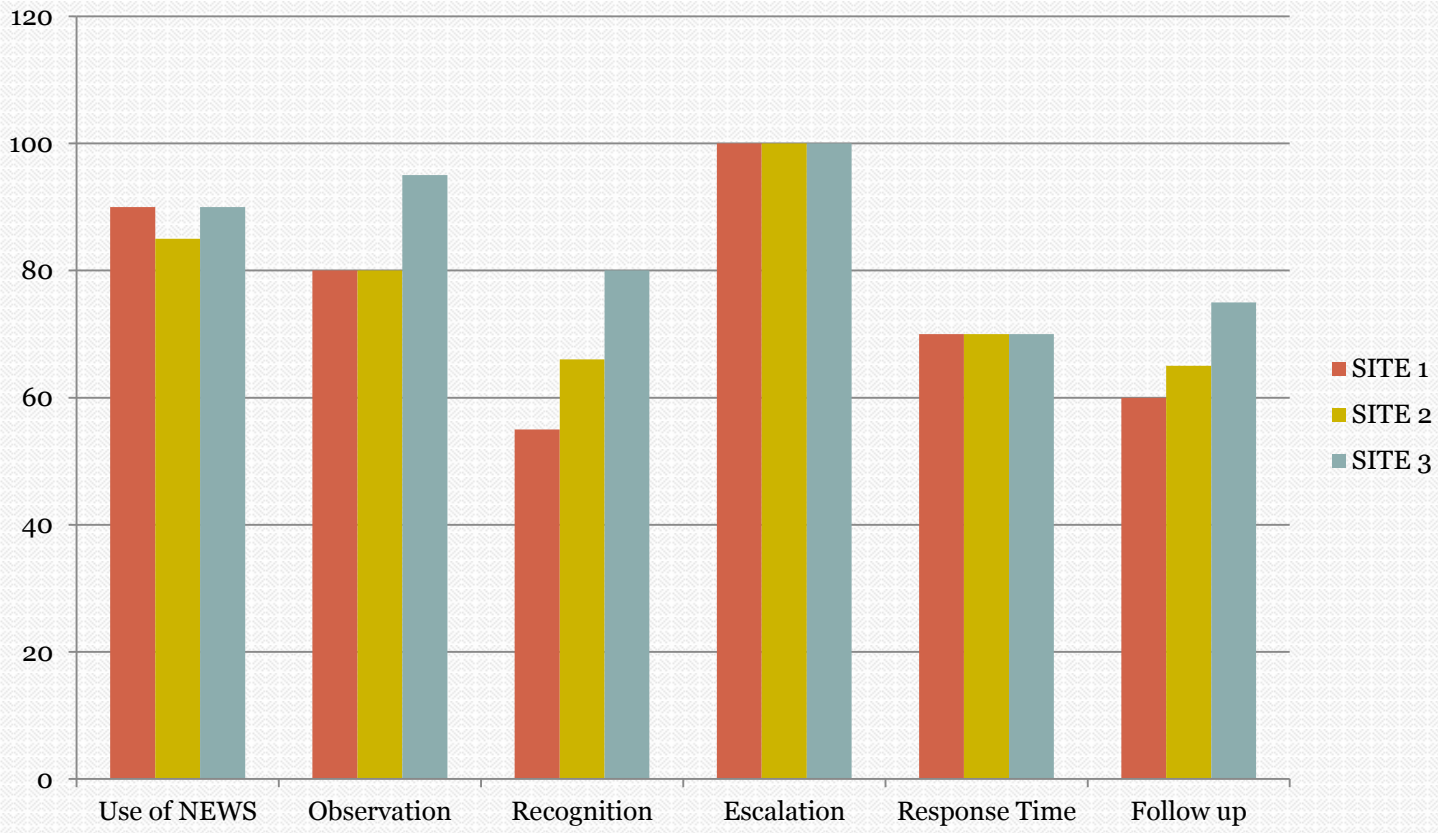
From Baseline

- **From Base line it was found that each site had unexpected neonatal admissions due to collapse however it was highest in one site .**
- **Retrospective Data from January- August 2013.**
- **The study covered data collected from October 2013-March 2014.**

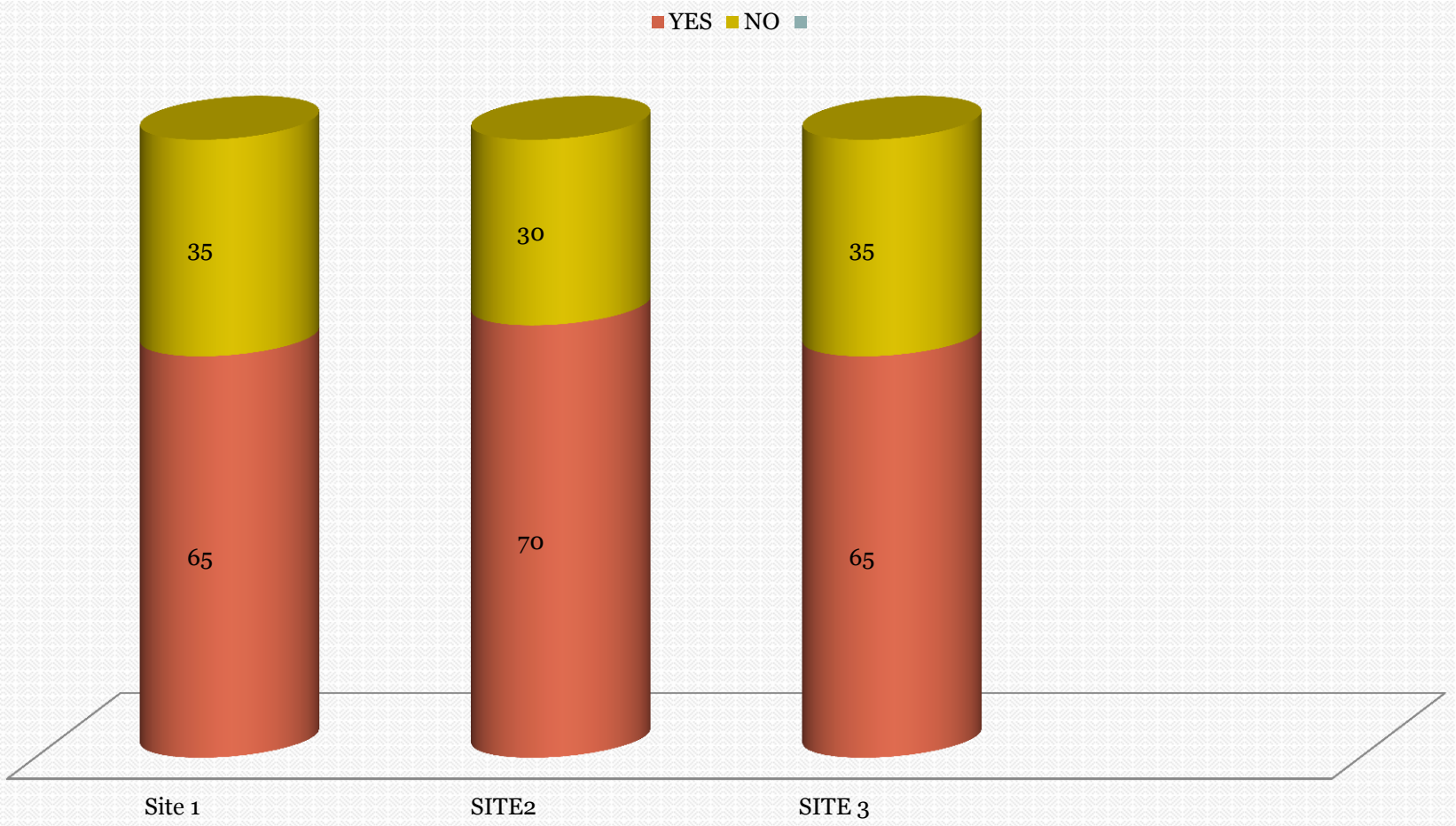
Process


•5 POINT QUESTIONNARE
•4 WEEKS IN 3 SITES
•COLLATION OF INFORMATION
PILOT
PDSA
• Primary
• Secondary Drivers
• 3 months study
• Run Chart
• Results
Recommendations

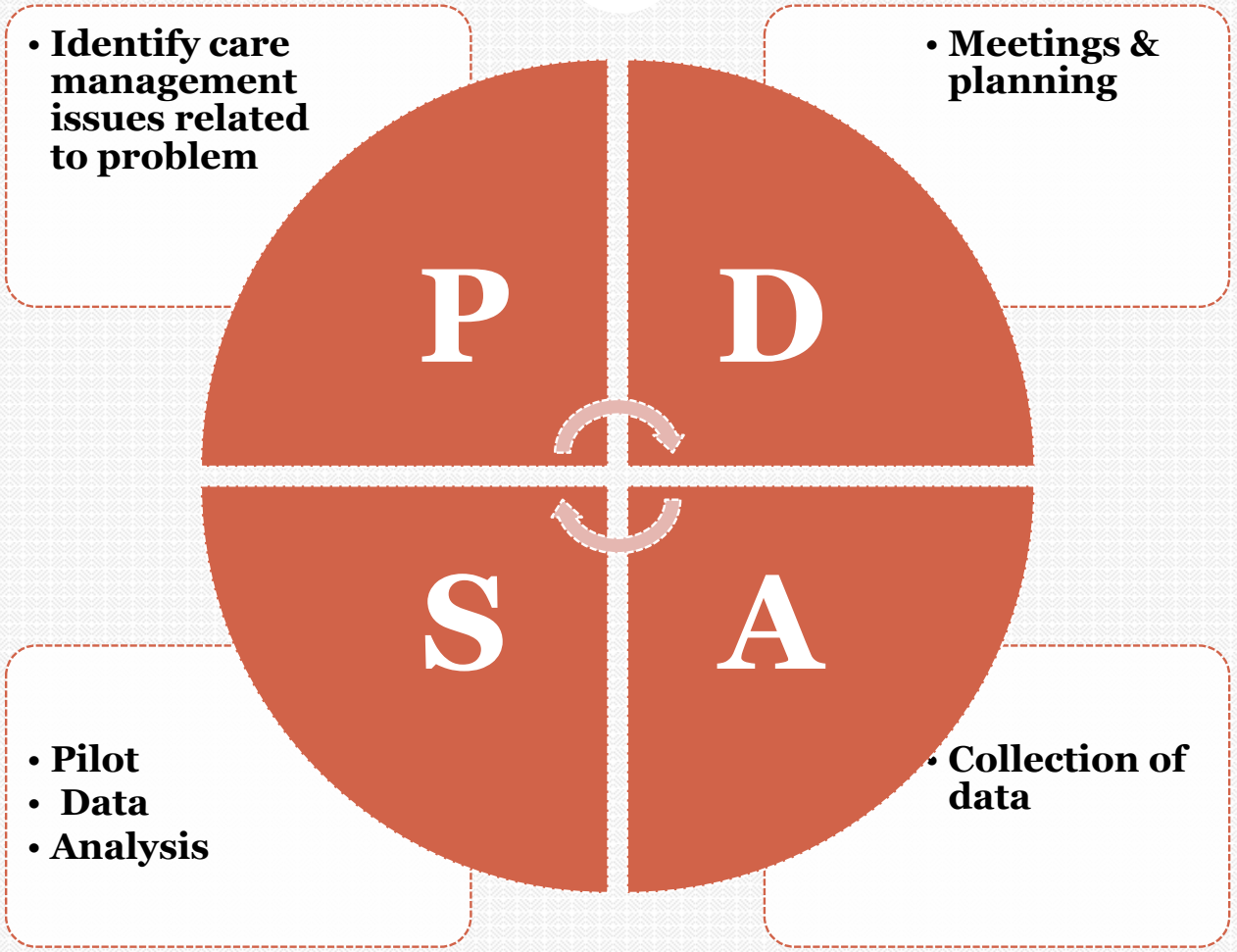
PILOT (4 WEEK PERIOD-Sept 2013)



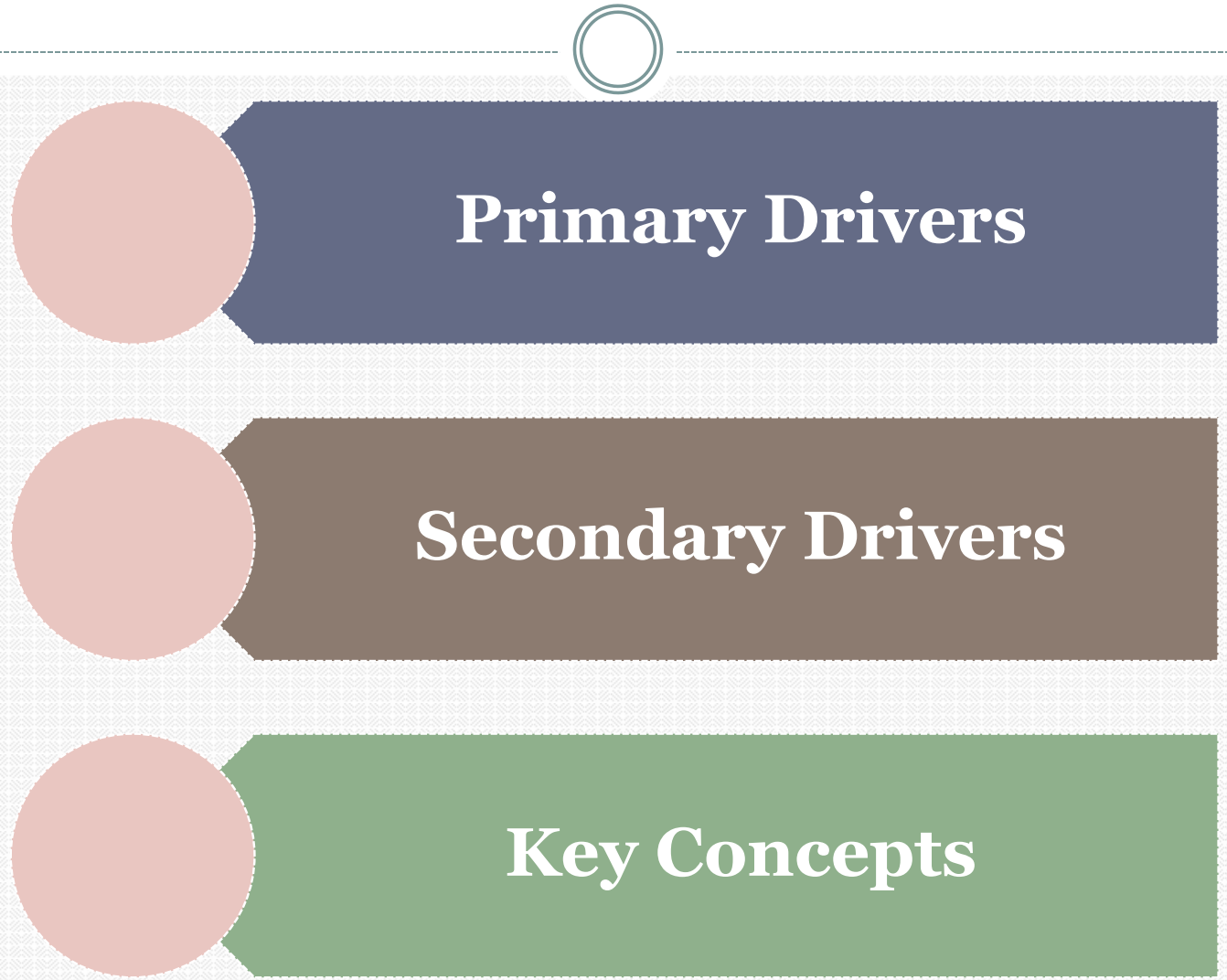
RECOGNITION



PDSA -1


• Identify care management issues related to problem
• Meetings & planning
P
D
S
A
• Pilot
• Data
• Analysis
• Collection of data

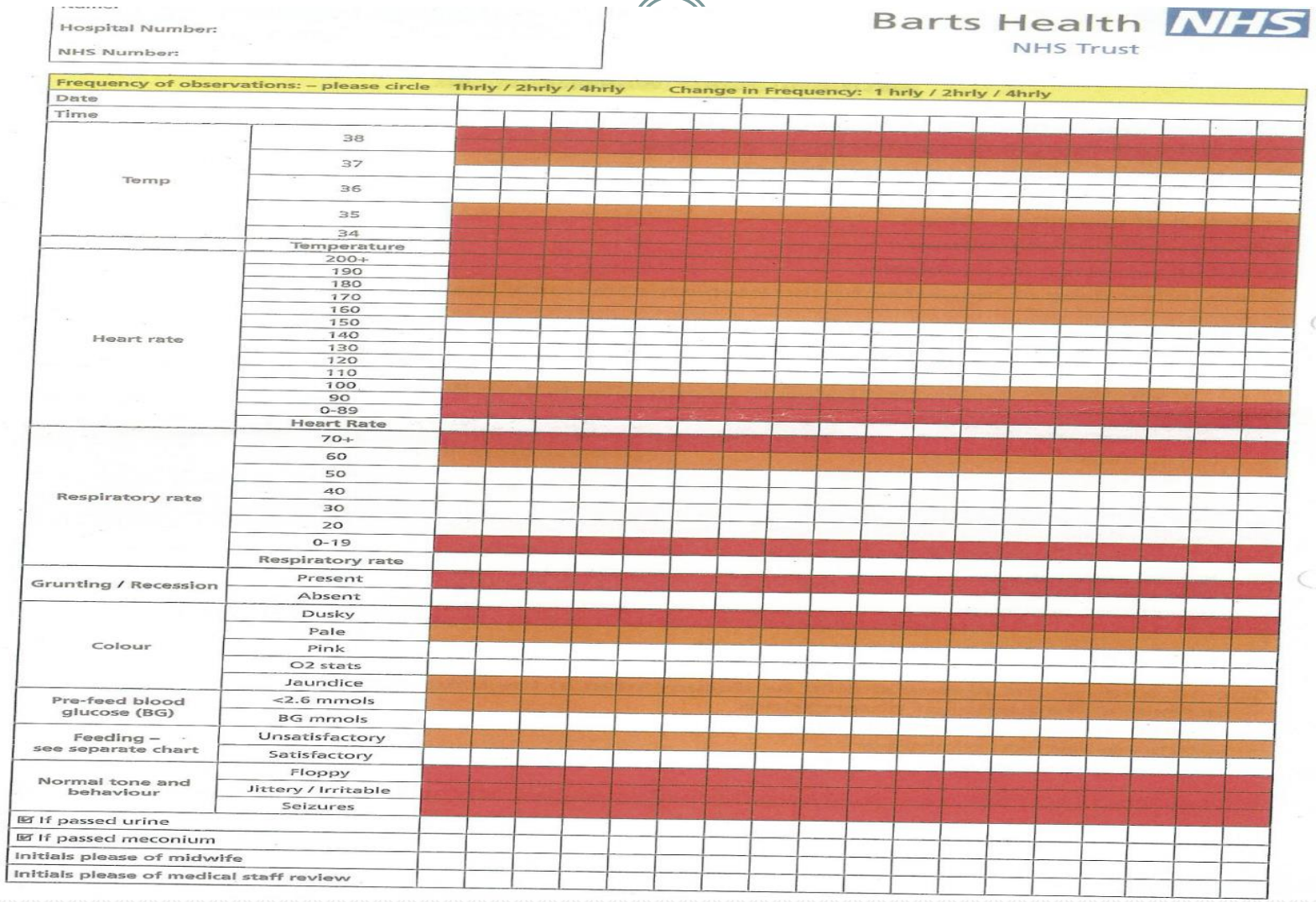
RISK ASSESSMENT



The Drivers

Primary Drivers	Secondary Drivers	Key Concepts
Risk Assessment tools	Diagnostic (Apgars/cord PH) The appropriate use of NEWS /NEWS Parameters	• Maternal history • Hand over tool following delivery • Timely Escalations • Adherence to tool guidance. • Equipment
Staffing	Skills Mix Appropriate staff patient ratio Staff competency Education &Training	• Staffing Levels • Workload Distribution • Mandatory training
Escalation Process	Recognition of problem MDT Communication SBAR Delay in response time Functioning Neonatal Resuscitaire	• Staff competency in recognition of the deteriorating neonate • Timely escalation • Timely senior review care • SBAR • Handover

Implementation of NEWS



Hospital Number:

NHS Number:

Barts Health NHS
NHS Trust

Frequency of observations: – please circle	1hrly / 2hrly / 4hrly	Change in Frequency: 1 hrly / 2hrly / 4hrly
Date		
Time		
Temp	38	
	37	
	36	
	35	
	34	
	Temperature	
Heart rate	200+	
	190	
	180	
	170	
	160	
	150	
	140	
	130	
	120	
	110	
	100	
	90	
	0-89	
	Heart Rate	
Respiratory rate	70+	
	60	
	50	
	40	
	30	
	20	
	0-19	
	Respiratory rate	
Grunting / Recession	Present	
	Absent	
Colour	Dusky	
	Pale	
	Pink	
	O2 stats	
	Jaundice	
Pre-feed blood glucose (BG)	<2.6 mmols	
	BG mmols	
Feeding – see separate chart	Unsatisfactory	
	Satisfactory	
Normal tone and behaviour	Floppy	
	Jittery / Irritable	
	Seizures	
☑ If passed urine		
☑ If passed meconium		
Initials please of midwife		
Initials please of medical staff review		

IMPLIMENTATION OF NEWS

Barts Health NHS
NHS Trust

NEONATAL EARLY WARNING SCORE

Please tick appropriate box, this chart is to be used for:

- ☐ Babies with meconium stained liquor at delivery
- ☐ Babies whose mothers have had PROM
- ☐ Babies whose mothers have had risk factors for GBS
- ☐ Babies of diabetic mothers
- ☐ Pre-term/SGA/IUGR babies
- ☐ Babies receiving IV antibiotics
- ☐ Any other baby as requested by the Paediatric/Neonatal Team

Signs of Respiratory Distress include nasal flaring, rib recession, grunting, respiratory rate >60

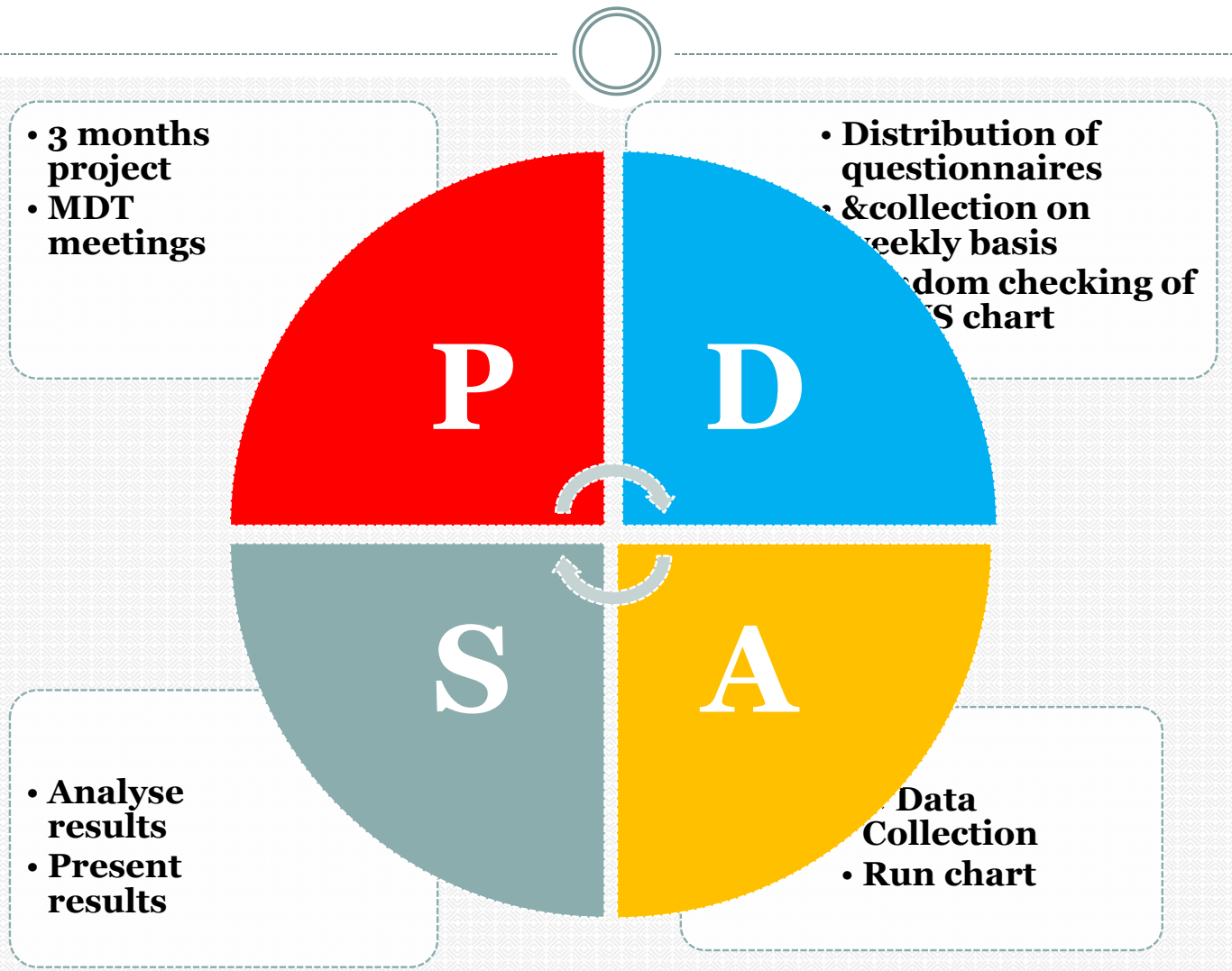
NEW SCORE	ACTION TO BE TAKEN
Amber	**One Amber score:** Inform Midwife in Charge & request SHO review. Repeat observations in 30 mins. **Two or more Amber scores: For urgent medical review**
Red	Inform Midwife in Charge & request urgent SpR review
If Red maintained for more than 2 consecutive readings	Inform Midwife in Charge & request Consultant Paediatric / Neonatal review **Do you need the Paediatric Crash Team? (Call 4444 Code 03 (WX) or call 2222 (RLH and NUH)**

The outcome of the review should be documented in the baby notes:

- Increase in frequency of observations
- Changes in patient management
- Further escalation of review
- Admit to neonatal unit

Remember: If you feel you need more help at any time, call for help regardless of NEW Score

PDSA 2


• 3 months project
• MDT meetings
• Distribution of questionnaires
• &collection on
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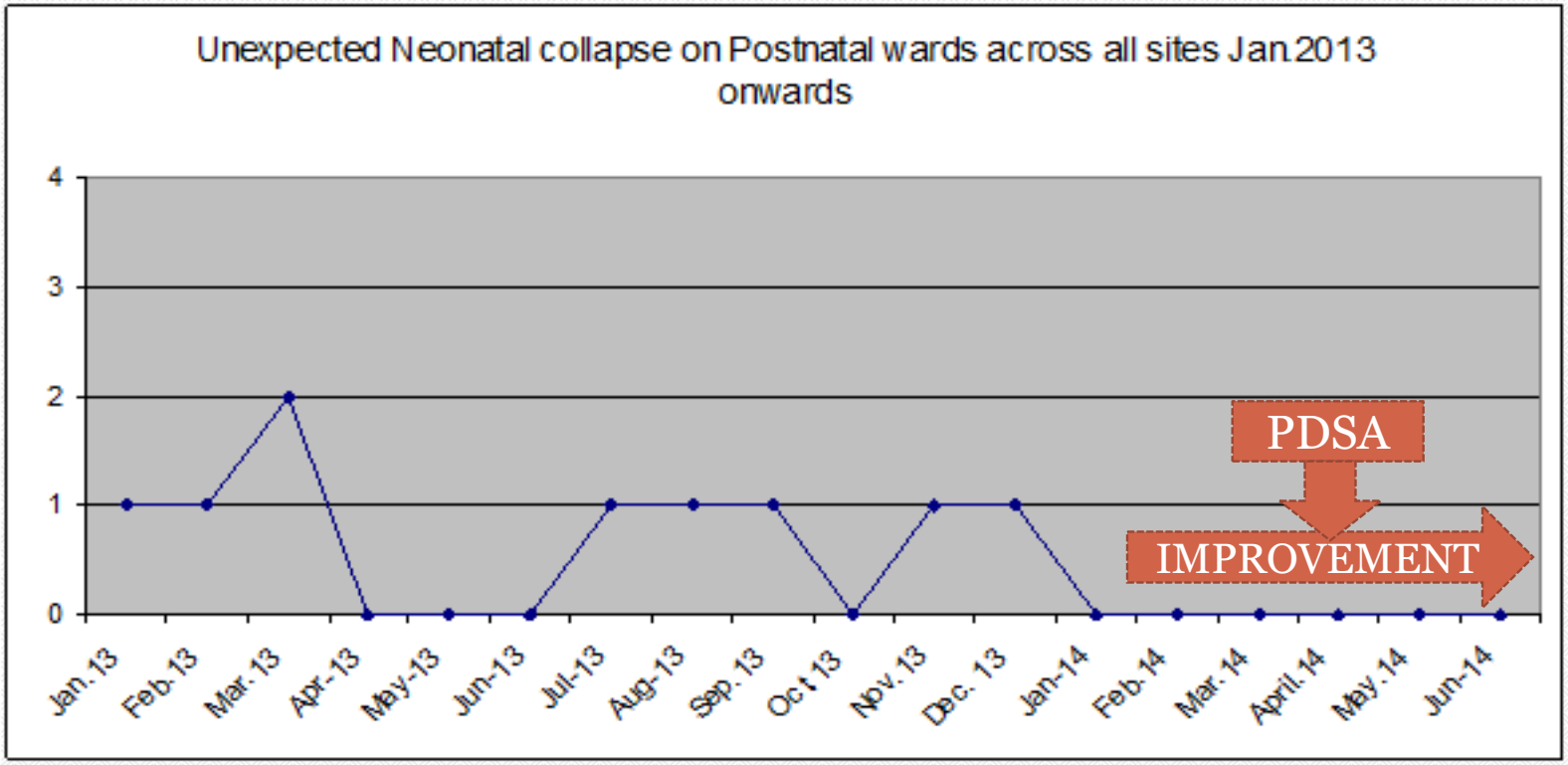
dom checking of
S chart
P
D
S
A
• Analyse results
• Present results
Data Collection
• Run chart

Run Chart

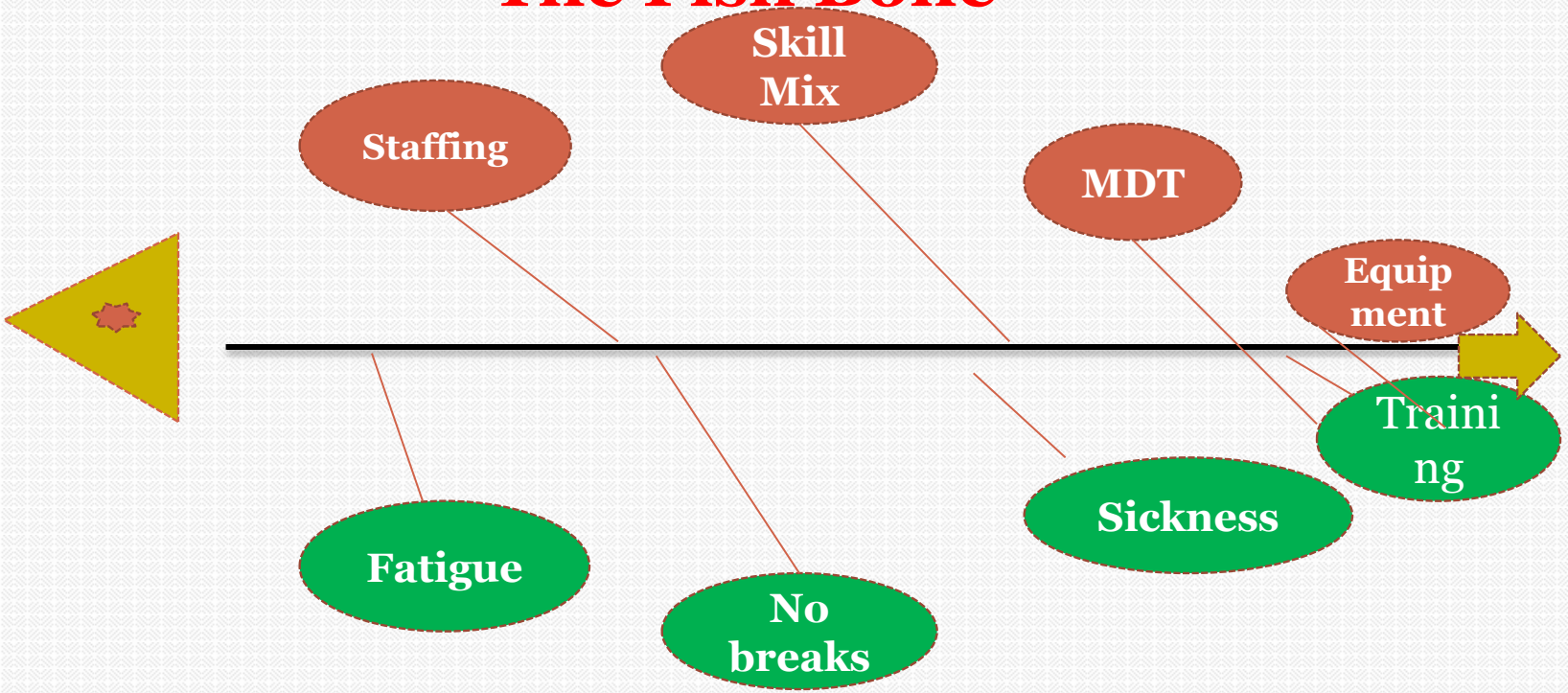

Unexpected Neonatal collapse on Postnatal wards across all sites Jan 2013 onwards
4
3
2
1
0
Jan-13
Feb-13
Mar-13
Apr-13
May-13
Jun-13
Jul-13
Aug-13
Sep-13
Oct-13
Nov-13
Dec-13
Jan-14
Feb-14
Mar-14
April-14
May-14
Jun-14
PDSA
IMPROVEMENT

What Made the difference???

- Was it training?
- Was it Surveillance?
- Was it vigilance?
- Was it raising awareness?

Human & Organizational Factors

- **The Fish Bone**



OUT COME

- 1. Business Case for TC Nurse across sites.
- 2. Standardization of NEWS chart& guidelines across sites
- 3. Organization of postnatal ward structure in the site where original figures were high
- 4.Review work load… acuity and levels
- 5.Staffing ratio …skill mix …Huddle weekly projection
- 6.Neonatologist presence at postnatal handover 8am and Huddle 13.00 hours daily

Current Progress-2015

- **Ward huddle every day at 13.00pm to discuss ward activity, discharges and identify/resolve eventual problems.**

- Is attended by midwives on duty, sister in charge, Obstetrics and paediatric SpR and SHO, ward clerks, student midwives and safeguarding midwife
- **Use of pens on White Board**

- Green for Obstetrician notes
- Black for Paediatrician notes
- Red for Safeguarding notes
- Blue for any other notes
- **Magnets:**
- Midwife to apply the appropriate magnet if review is needed and doctor/midwife who has reviewed to remove the magnet after review.
- Discharges:

- **Gold: 10.^{00} -11.^{00} am**
- **Silver: 11.^{00} am -12.^{00} pm**
- **Bronze: 12.^{00}-13.^{00} pm**

CURRENT

- **None Reported to DATE!!!**

Implications of Project

- Implications for Management Team
- Implications for Education & Training
- Implications for Improving standards
- Implications for Practice
- Implications for Research

Project Ownership

- **Director of Midwifery BARTS Health NHS Trust**-Sandra Reading

- **Project Manger** – Kate Gray

- **Project Coordinators-** Mary Olucie- Consultant Midwife &Kade Mondeh Professional Development Lead

Thank You

REFERENCES

- Becher, Julie-Clare, Shetty S Bhushan, and Andrew J Lyon (2011). Unexpected collapse in apparently healthy newborns - a prospective national study of a missing cohort of neonatal deaths and near-death events. Arch Dis Child Fetal Neonatal Ed doi:10.1136/adc.2010.208736

- British Association of Perinatal medicine (2011) Guidelines for the Investigation of Newborn Infants who suffer a Sudden and Unexpected Postnatal Collapse In the First Week of Life www.bapm.org/ accessed 29/05/2014

- Eric Herlenius and Pierre Kuhn (2013) Sudden Unexpected Postnatal Collapse of New born Infants: A Review of Cases, Definitions, Risks, and Preventive Measures www.ncbi.nlm.nih.gov/pmc/articles/PMC3599160/ accessed 29/05/2014

- Institute of Healthcare Innovation Improvement methodology