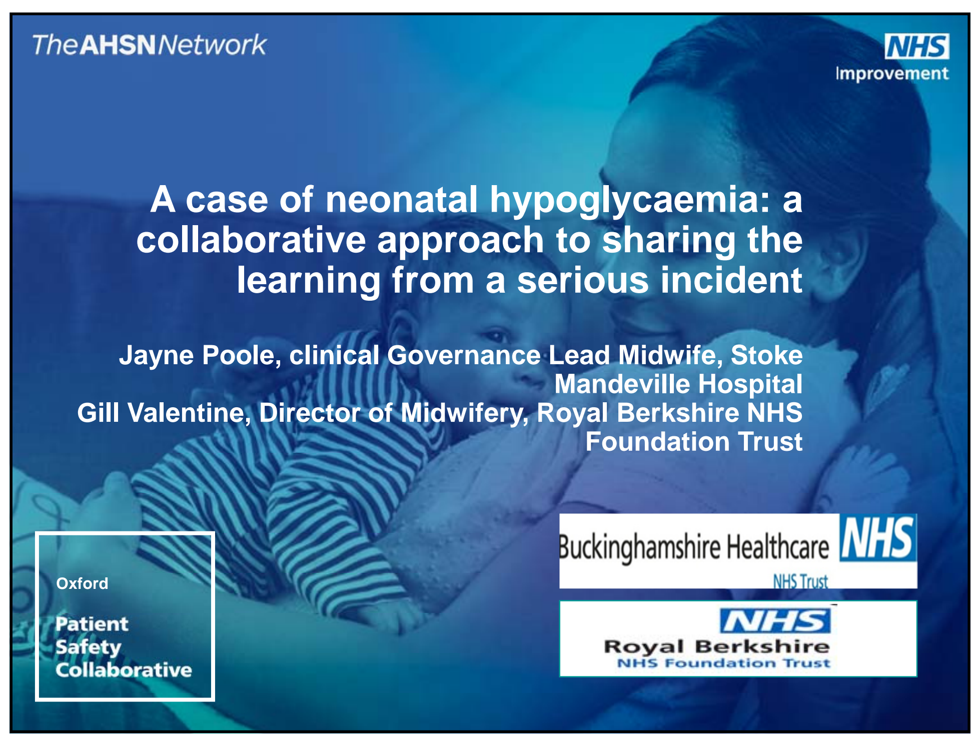
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NHS
Improvement
A case of neonatal hypoglycaemia: a collaborative approach to sharing the learning from a serious incident
Jayne Poole, clinical Governance Lead Midwife, Stoke Mandeville Hospital
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Oxford
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Buckinghamshire Healthcare NHS
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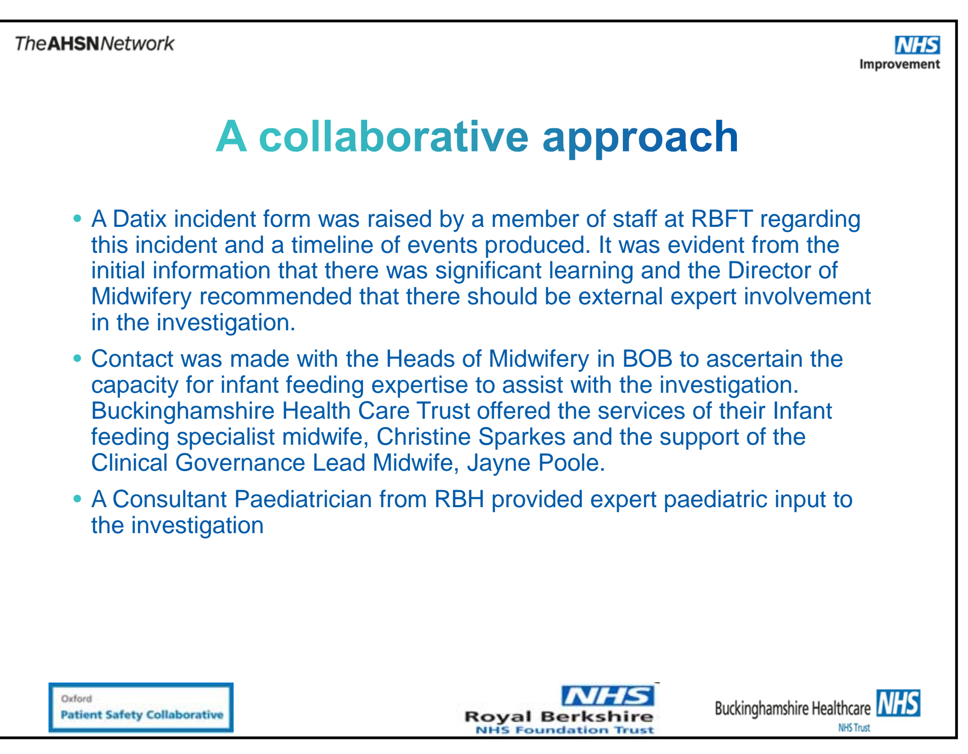
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A collaborative approach
• A Datix incident form was raised by a member of staff at RBFT regarding this incident and a timeline of events produced. It was evident from the initial information that there was significant learning and the Director of Midwifery recommended that there should be external expert involvement in the investigation.
• Contact was made with the Heads of Midwifery in BOB to ascertain the capacity for infant feeding expertise to assist with the investigation. Buckinghamshire Health Care Trust offered the services of their Infant feeding specialist midwife, Christine Sparkes and the support of the Clinical Governance Lead Midwife, Jayne Poole.
• A Consultant Paediatrician from RBH provided expert paediatric input to the investigation
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Summary

- **Incident:**
- baby admitted to hospital with severe neonatal hypoglycaemia and seizures.

- **Problems identified:**
- baby did not establish effective and adequate breastfeeding at home despite involvement of the community team
- Inappropriate management of a baby with developing hypoglycaemia

- **Effect on Baby:**
- Neurological injury confirmed on MRI, secondary to hypoglycaemic damage, with cortical visual impairment

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Background

- **G1 P0+0. Low-risk pregnancy. Pool birth, at home at 40+2 weeks**
- Baby born at 02.37, 24.01.18. Apgars 9,10,10. birthweight 3330 grams
- skin to skin with mother. Attempts to latch at breast not successful. Discussion about hand expression syringes provided. Observations normal. Feeding cues present
- **12.51** mother called community MW reporting baby hasn't fed since birth.
- **13.20- 14.50** home visit. Baby pink, alert, good tone. Feeding cues observed, but would not latch / suck. Hand expressed 0.15ml colostrum, given to baby via syringe. Advised to express 3hrly.
- **19.30 – 22.13** text messages between mum and MW. Baby reported to have taken '2 helpings' of colostrum, last amount at 18.30 (0.2ml)
- **22.50:** home visit by MSW. Baby noted to be sleepy, have 'shivery' movement, but good colour and tone. Would not latch / suck. Baby fed 0.12-1ml EBM via syringe. Mother notes baby 'got his colour back' following feed. No observations taken

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Background

Day 1

- **07.11-08.40** texts between mother and CMW 1. Mother reports 0.2 and 0.4 ml EBM given at 3hrly intervals overnight. Appointment made for B/F clinic
- **11.00 – 13.50** mother unable to attend B/F clinic as feeling unwell. CMW 2 visit at home. Baby fed 0.2ml. Temp 36.3. sleepy, no feeding cues seen. Believed to be due to having just been fed. No further observations taken
- Further 0.9ml EBM given via syringe. Advice to continue 2hrly. Parents assured baby had received good amount of colostrum. Appt for B/F clinic in 5 days, but plan for community visit the following day
- Discussed with Infant Feeding Midwife. CMW 2 concerned is 'mechanical' problem as mother had flat, slightly inverted nipples. Different techniques to encourage attachment discussed. IFM arranged to see baby following his NIPE the next day

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Background

Day 2

- **11.25** text from mother to CMW2 reported baby had a 'good feed – 1 syringe'
- **11.55** NIPE check normal, but baby noted to have dry mouth, and be a 'reluctant feeder'. Jaundice check normal
- **13.00** seen by IFM: notes baby to be sleepy, not hungry and showing no feeding cues. 3mls EBM given via syringe – baby noted to be quiet, weak suck and needed coaxing. No observations taken. **Baby is now 60 hrs old**
- Further 15mls EBM obtained using pump. IFM advised baby required 30ml feed x8 in 24hrs and use formula if unable to obtain enough EBM.
- IFM left clinic – baby given 10mls of the EBM expressed, observed by student MW and noted to be sleepy and not actively sucking. Parents advised to offer remainder of EBM at home, then continue with feeding plan

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Background

Day 2 – Day 3

- **23.16** mother calls CMW1 as baby sleepy, lethargic and not feeding. Advised to take baby to A/E by ambulance.
- 00.15 Baby taken to ED by parents. On admission baby dehydrated, hypoglycaemic (0.45mmoles/litre), hypothermic (36 degrees) and seizures secondary to hypoglycaemia.
- Venous access proved difficult and access secured 20 minutes after arrival, oral glucose gel given whilst securing access which improved blood glucose level. Intraosseus access considered but not used.
- First dose of intravenous dextrose given at appropriate dose, 15 minutes after hypoglycaemia first noted. Glucose infusion commenced at 1 hour 39 minutes after admission. Levels first within normal range 57 minutes (>3mmols/l) after arrival but at a probably “relatively safe level” at 2.4 mmoles/l at 45 minutes

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Background

- The SORT retrieval team were contacted at 1 hour 39 and on site by 3hours 45 minutes the infant was subsequently transferred to Oxford PICU.
- Neurological injury confirmed on MRI secondary to hypoglycaemic damage, initial tests also indicate cortical visual impairment

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NHS Improvement

Summary of feeds from birth to A/E admission

24.01.18	
02.37	baby boy born
05.05 - 05.40	attempt to feed: not successful
13.30	0.15ml EBM
15.00	EBM – amount unknown but likely to be similar to earlier amount
18.30	0.2ml EBM
25.01.18	
00.15	1ml EBM
03.00	0.2ml EBM
06.00	0.4ml EBM
11.55	0.2ml EBM
12.40	0.9ml EBM
25.01.18 - 26.01.18:	record of 1ml EBM given, but unclear of time. No other feeds documented, but likely that mother continued to express 2-3hrly and obtained similar amounts.
26.01.18	
13.00	3ml EBM
13.30	10ml EBM

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Problems Identified

- **preoccupation / narrowed focus:** each episode of care given by different staff member. preoccupation at each individual visit to support with the practical elements of feeding at the time, with no overview of feeding history or consideration of other factors that may affect feeding
- **Guidelines only partially followed and guidance not appropriate to a community setting:** no observations performed. Guideline doesn't specify acceptable volumes for age of baby. Guideline more appropriate for hospital setting where clinicians available to monitor and review
- **Communication:** over-reliance on use of text messages between midwives and with mother. Accurate details difficult to obtain
- **Education:** lack of recognition of signs of baby being unwell: no association between feeding history and baby's presenting condition
- **Team factors:** inappropriate allocation of MSW and student MW to assess feeding.

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Good Practice

- Good provision of support for the mother from the community team.
- Very high standard of witness reports from staff involved in the care.

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Learning

- Infant Feeding Protocol should include recommended acceptable volumes for breastfeeding babies and management of a baby with signs of insufficient milk intake and warning signs that suggest an unwell infant who requires medical review.
- specific guideline or Standard Operating Procedure for 'management of baby who has not fed at birth and continues to be a reluctant feeder' in a community setting.
- Clinical assessments and handovers should not be made via text messaging, where problems have been identified
- use of feeding charts to ascertain an accurate history where feeding problems have been identified.

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A Collaborative Approach

Difficulties encountered: None

- Identified link with RBH for obtaining relevant information / statements / advice on trust processes
- easy and open communication via telephone and email allowed good discussion and sharing opinion on points raised, without need for travel
- **Benefits:**
- Greater objectivity: findings of report are impartial and fair, for both parents and staff involved
- Identification that the issues identified are not unique to the organisation – could happen anywhere
- Learning points and recommendations used to inform guideline updates and training at BHT as well as RBH.
- Presented at Governance Leads meeting for wider sharing across the region
- Helpful for the parents to know their experience has had a widespread impact on improving services

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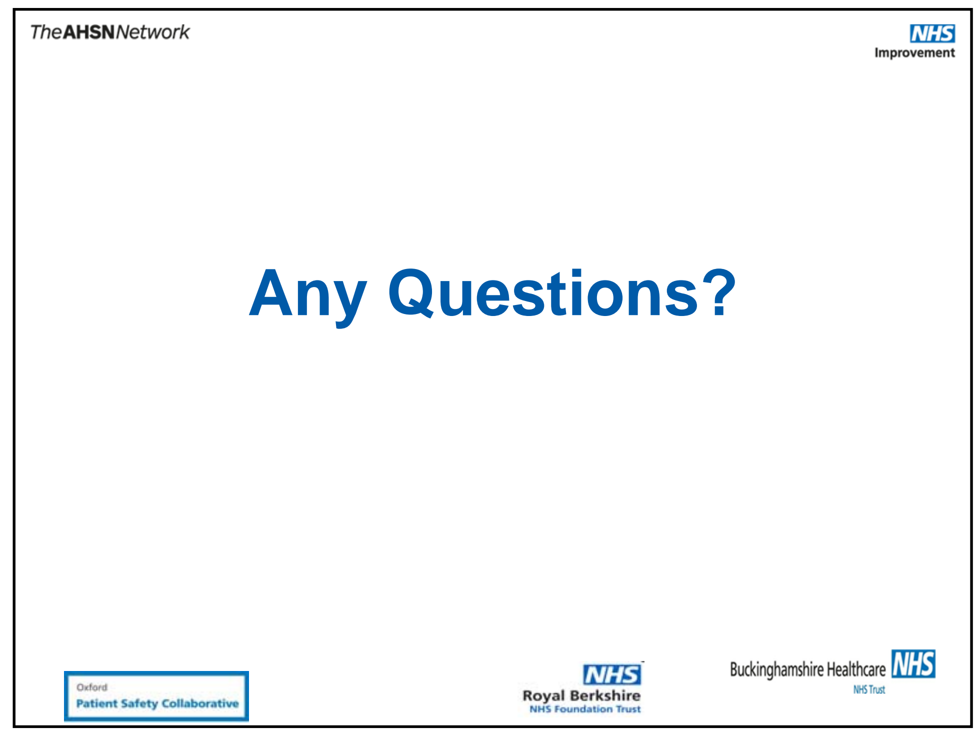
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Any Questions?
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