POSTER SESSION 5 - NURSING
SEPTEMBER 15, 2021 – 13:00 – 14:30 CEST

ID 190 - SHORT-TERM MUSIC THERAPY FOR PREMATURE INFANTS AND THEIR PARENTS: RESULTS FROM INTERNATIONAL RANDOMISED CONTROLLED TRIAL LONGSTEP

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Background
Neonatal intensive care (NICU) hospitalisation following premature birth is associated with stress and anxiety in parents, and can affect parent-infant bonding negatively. Music therapy (MT) has demonstrated potential to meet needs of both infant and parents, however rigorously designed and adequately powered studies that investigate parent-infant mutual outcomes are lacking. We present short-term outcomes from international RCT LongSTEP (NCT03564184) which investigates the effect of MT on mother-infant bonding and parent mental health.

Methods
LongSTEP is designed as a parallel, pragmatic, randomised controlled trial. Premature infants (<35 GA weeks at birth) and their parents were enrolled from eight NICUs in Argentina, Colombia, Israel, Norway and Poland. We used a resource-oriented MT approach that builds on family-centred and developmental care principles. MT was designed to promote parent-infant mutual regulation through parent-led, infant-directed singing facilitated by a music therapist. Families in the MT group participated in 3 sessions per week throughout NICU hospitalisation. Primary outcome was mother-infant bonding as measured by the Postpartum Bonding Questionnaire (PBQ), with secondary outcomes of maternal postpartum depressive symptoms and parent anxiety. Data was analysed using linear mixed effect models (ANCOVA) testing for group differences at the assessment time point of discharge.

Results
213 participants were recruited from August 2018 through April 2020. Mean (SD) birthweight was 1394 grams (432.71). Mean (SD) GA at birth was 30.4 weeks (2.67). 108 participants were randomised to standard care, and 105 to standard care plus MT. 208 of 213 (98%) participants completed treatment and assessments. Participants in the MT group received a mean (SD) of 10 sessions (5.95). 87 of 105 (83%) received the target 6 sessions minimum. Mean PBQ total scores at discharge (SD) were 5.51 (6.65) in the MT group and 5.92 (6.38) in the SC group (p=0.318). No differences in secondary outcomes were found.
Conclusion

This MT approach resulted in no significant effects on mother-infant bonding or parent mental health in spite of an overall improvement on all measures in the total sample. The results warrant further examination of the impact of MT on the parent-infant relationship and parental wellbeing, with particular emphasis on strengths-focused outcome measures.

None declared
ID 56 - SAFETY OF EARLY DISCHARGE OF PRETERM INFANTS ON NASOGASTRIC TUBE FEEDING AND OUTPATIENT CLINIC FOLLOW-UP

Doctor Rahel Schuler¹, Prof. Harald Ehrhardt, Prof. Walter Mihatsch²³
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Background
Hospitalization of preterm infants easily reaches several weeks or months. This is a very stressful time for parents, siblings and the infant and may have long-lasting negative psychological effects. To reduce the time of hospitalization early discharge programs on nasogastric tube feeding (NTF) have been established with follow up by home care nursing.

In several European regions such as ours there is a structural lack of pediatric home care nursing. Given the benefits of early discharge a new program with early discharge on NTF with close outpatient clinic follow-up has been developed.

The aim of the present retrospective analysis was to evaluate the new program with regard to safety.

Methods
119 preterm infants were discharged on NTF in 2017 and 2018 from our tertiary care neonatal unit (median gestational age 31.0 weeks, median birthweight 1650 g) as soon as physiological competencies were achieved and parents were confident in NTF. For safety assessment growth until term equivalent age and re-hospitalizations within two months after discharge were evaluated.

Results
Follow up was attained in 95 of 104 parent-infant dyads. Infants were discharged home at a median gestational age of 35.4 weeks. Infants with a gestational age of 22-26 weeks were discharged at a median of 36 (34-38.3) weeks postmenstrual age (PMA), those with 27-31 weeks at 34.7 (34.3-36) weeks PMA and those with 32-36 weeks at 35.6 (35-36) weeks PMA. Removal of the nasogastric tube was at 36.9 (36 to 37.6) weeks PMA. Until term equivalent age (TEA) there was no growth faltering, but catch up growth of head circumference (Table 1). Within two months after discharge 30 infants were re-hospitalized, no re-hospitalization was related to NTF complications.

Conclusion
Early discharge of preterm infants with NTF together with close outpatient clinic follow-up appears to be safe as there was no growth faltering until TEA and no re-hospitalizations due to NTF.
ID 55 - PARENTAL SATISFACTION WITH EARLY DISCHARGE OF PRETERM INFANTS ON NASOGASTRIC TUBE FEEDING AND OUTPATIENT CLINIC FOLLOW-UP

Doctor Rahel Schuler¹, Prof. Harald Ehrhardt¹, Prof. Walter Mihatsch²,³
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Background
Towards the end of hospitalization frequently at least partial nasogastric tube feeding (NTF) is required in preterm infants whereas most other physiological competencies (e.g. respiratory stability) have been achieved. This period is especially stressful for parents as they may have been separated as a family for weeks. To improve familial psychosocial wellbeing and bonding by reducing the time of hospitalization early discharge programs on NTF have been established with follow up by home care nursing.

In several European regions there is a structural lack of pediatric home care nursing. Given the benefits of early discharge a new program with early discharge on NTF with close outpatient clinic follow-up has been developed.

The aim of the present retrospective study was to evaluate the new program with regard to home NTF complications, re-hospitalizations, parental satisfaction and parental stress level.

Methods
119 preterm infants were discharged on NTF in 2017 and 2018 from our tertiary care neonatal unit (median gestational age 31.0 weeks, median birthweight 1650 g) as soon as physiological competencies were achieved and parents were confident in NTF. Parental satisfaction and parental stress level was evaluated after discharge by a standardized questionnaire. For safety assessment all re-hospitalizations within two months after discharge were evaluated.

Results
Infants were discharged home at a median gestational age of 35.4 weeks after a median hospital stay of 22 days. Follow up was attained in 95 of 104 parent-infant dyads. Accidental feeding tube displacements were managed in the hospital outpatient setting. There were no NTF associated re-hospitalizations. The majority of parents (94%) reported that they had made the right decision in taking their infant home on NTF. At the time of discharge retrospectively 86% of parents felt very well prepared to perform NTF. 70% Of parents rated their stress level at home as low (<2 out of 5). Table 1.

Conclusion
Early discharge of preterm infants with NTF together with close outpatient clinic follow-up is very well accepted by parents and appears to be safe.
Background:
Infants who are admitted to neonatal intensive care are not immune to the harmful effects of ionizing radiation. In our trust like so many neonatal units, utilizes X-ray to confirm safe placement of catheter. This audit was conducted to survey the number of X-ray used to define the tip of longline position and look at the factors associated with the need for more than one X-ray to determine correct placement.

Methods:
A retrospective audit including babies requiring longlines during admission to St. George's Hospital Neonatal Unit from August 2016 to January 2020. Information was extracted from electronic neonatal database, Badgernet UK. A single observer reviewed all X-Rays that were performed to assess longline position. We reviewed various factors that could be associated with the need for more than one X-ray to define line position.

Results:
A total of 552 longlines for 361 babies with median gestational age 28 weeks (23-41+5) and median birth-weight 1366 grams (350-4894) were reviewed. The day of insertion ranged from day zero up to day 194 of life. More than half (59%) of longlines needed adjustment after insertion and required further x-rays. Almost 20% (105) of lines were used despite suboptimal position. Insertion site in the upper limb (odds ratio 4.5 CI 3.06 TO 6.6 P<0.0001), corrected gestation >28 weeks at the time of insertion (odds ratio 1.45 CI 1.1 to 2.08 P<0.043), highly experienced operator (Odds ratio 1.4 CI1 to 2.03 P=0.05) were associated with the need for more than one X-ray to define longline position. Complication rates associated with longlines in a suboptimal position were higher compared to those with an optimal position (odds ratio 1.75 CI 1.06 to 2.86 P=0.0266).

Conclusion:
More than half of longlines inserted required two or more x-rays to confirm final optimal position. Long lines in upper limbs, babies with corrected gestation (>28 weeks) and highly experienced operator were associated with need for > 1 X-Ray to define the position. Sub optimally placed longlines are more likely to be associated with device complications.

None declared.
ID 136 - CONCEPTUAL MODEL OF FAMILY RESILIENCE IN THE NICU : A THEORETICAL REPRESENTATION OF PARENTS' LIVED EXPERIENCES

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BACKGROUND
In several pediatric settings, family resilience has been studied to better understand how families overcome adversities. These studies have shown that family resilience can explain the positive outlook and family cohesion that some families experience in times of crisis. Good family resilience has also been associated with a reduction in negative psychological symptoms in addition to promoting balanced family functioning. However, to our knowledge, this concept remains rarely examined in the neonatal context, where families must adapt to the preterm birth of their infant. This experience, which is unlike any other, has long-term emotional and affective repercussions on these families. This unique trauma prompts us to consider that a family resilience model in neonatology would lead to a better understanding of its contributing factors.

METHODS
A review of the literature with two distinct themes, family resilience and the experience of parents of preterm infants, was completed. A qualitative analysis of definitions and conceptualizations of family resilience was pursued. Based on these findings, we adapted these definitions, so that they reflect the specificities of the neonatal context and propose a model of family resilience in the neonatal setting.

RESULTS
The NICU Family Resilience Model describes the specific aspects of the neonatal context that theoretically contribute to the conceptualization of family resilience. Concrete examples in neonatology are used to postulate the evolution of the three central processes of family resilience. Aspects of the neonatal experience that have been extensively described, including the unfamiliar environment, the presence of healthcare professionals, the management of uncertainty and novel issues, and the progressive acquisition of parenting skills, are among the elements incorporated into the model.

CONCLUSION
Family resilience remains scarcely explored in the neonatal context, despite its potential to reduce the negative impacts of prematurity. The model emphasizes the unique nature of the neonatal context, which supports the importance of proposing a model specific to this clientele. This model can guide the development of optimal interventions promoting family resilience in the neonatal context, which thereafter could be evaluated through research.
None declared
ID 195 - EARLY BREASTFEEDING INITIATION IN A LARGE COHORT OF PRETERM INFANTS.

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Background and aim:
The World Health Organization (WHO) and The Baby-friendly Hospital Initiative for neonatal wards recommend that stable preterm infants should be offered unrestricted access to the breast and initiate breastfeeding regardless of gestational age (GA), postmenstrual age (PMA), birthweight, or current weight. The aim of the study was to describe age and performance at the first breastfeeding attempt and detect differences or similarities between different GA groups in preterm infants.

Methods:
A multi-center cohort study from 13 Danish NICUs with questionnaires answered by mothers of 934 preterm infants with GA 23 – 36 weeks. First breastfeeding attempt was defined as the first time the infant was offered the breast.

Results:
There were significant differences in PMA at first breastfeeding attempt in four different gestational age groups with a correlation between low gestational age and low PMA at first breastfeeding attempt (Pearson’s correlation 0.760, p< 0.0001). The lowest PMA at first breastfeeding attempt was 26.29 weeks. Of the extremely preterm infants and very preterm infants 60% and 46%, respectively, had the first breastfeeding attempt before PMA 32 weeks (see Table 1). During first breastfeeding attempt 29% of all preterm infants were treated with nasal CPAP, but 83% of the extremely preterm infants.

Performance at the preterm infants first breastfeeding attempt was as follows: 24% “Smells the breast”, 23% “Licks and taste the milk”, 32% “Seeks and finds breast, gets nipple in mouth”, 19% “Suckles and swallows briefly”, and very few infants displayed a breastfeeding behavior beyond this at the first breastfeeding attempt. Only 2.5% of the preterm infants breastfed effectively enough to reduce the need for supplementation at the first breastfeeding attempt. At discharge to home 62% had established exclusively breastfeeding at the breast.

Conclusion:
Stable preterm infants can be presented to the mothers’ breast at a very early stage, even during nasal CPAP treatment. At the first and early breastfeeding attempt 79% of preterm infants do not swallow why all preterm infants should be allowed to follow their own pace in breastfeeding.
## Table 1. Initiated breastfeeding/first breastfeeding attempt within weeks of postmenstrual age

<table>
<thead>
<tr>
<th>Gestational age</th>
<th>PMA &lt; 28</th>
<th>PMA 28 - 30</th>
<th>PMA 32</th>
<th>PMA 34 - 35</th>
<th>PMA 36 - 37</th>
<th>PMA &gt; 37</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>6/65</td>
<td>19/65</td>
<td>14/65</td>
<td>16/65</td>
<td>4/65</td>
<td>4/65</td>
</tr>
<tr>
<td>n/N (%)</td>
<td>(9.2)</td>
<td>(29.2)</td>
<td>(21.5)</td>
<td>(24.6)</td>
<td>(6.2)</td>
<td>(6.2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gestational age</th>
<th>PMA &lt; 28</th>
<th>PMA 28 - 30</th>
<th>PMA 32</th>
<th>PMA 34 - 35</th>
<th>PMA 36 - 37</th>
<th>PMA &gt; 37</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/N (%)</td>
<td>(2.1)</td>
<td>(23.4)</td>
<td>(44.5)</td>
<td>(3.2)</td>
<td>(2.6)</td>
<td>(2.6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gestational age</th>
<th>PMA &lt; 28</th>
<th>PMA 28 - 30</th>
<th>PMA 32</th>
<th>PMA 34 - 35</th>
<th>PMA 36 - 37</th>
<th>PMA &gt; 37</th>
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<tr>
<td>age 32-34</td>
<td>386</td>
<td>-</td>
<td>-</td>
<td>144/386</td>
<td>179/386</td>
<td>52/386</td>
</tr>
<tr>
<td>n/N (%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(37.3)</td>
<td>(46.4)</td>
<td>(13.5)</td>
</tr>
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<tr>
<th>Gestational age</th>
<th>PMA &lt; 28</th>
<th>PMA 28 - 30</th>
<th>PMA 32</th>
<th>PMA 34 - 37</th>
<th>PMA &gt; 37</th>
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<tbody>
<tr>
<td>age 35-36</td>
<td>259</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>n/N (%)</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

| Total           | 6/899    | 23/899      | 96/899 | 244/899     | 189/899    | 189/899   | 124/899  | 28/899   |
| n/N (%)         | (0.7)    | (2.6)       | (10.7) | (27.1)      | (21.0)     | (21.0)    | (13.8)   | (3.1)    |

Table 1
None declared
ID 332 - SKIN DISINFECTION WITH WARM POVIDONE-IODINE: IS IT MORE COMFORTABLE FOR PRETERMS?

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1University Of Health Sciences İstanbul Ümraniye Training And Research Hospital, İstanbul, Turkey

Background:
Non-pharmacological interventions aimed at decreasing pain are recognized as a priority in neonatal pain research.

Objective:
We aimed to evaluate whether warm povidone-iodine application before PICC (peripherally inserted central catheter) insertion reduce the pain of the procedure in premature infants and ease the procedure in terms of duration and number of attempts, or not.

Methods:
A prospective randomized controlled trial was conducted in very low birth weight infants born before 32 weeks of gestation who requires central venous access after removal of umbilical catheter at the end of the 1st week. The infants were sequentially randomized into two groups before PICCs procedure. Skin disinfection was performed with povidone-iodine heated up to 40°C by the bain-marie method in the warm group (WG) and checked with a digital liquid thermometer before procedure, whereas povidone-iodine kept at room temperature without any preparation was used in the regular group (RG). None of the patients received analgesia or sedation before or during the procedure and a single neonatologist performed all of the procedures. Video recordings of infants and their monitors were performed all through the process to assure two blinded neonatologists to evaluate the NPASS scores of the infants at 3 time points (baseline values, during skin preparation and needle insertion) afterwards. Patients’ vital signs, body temperatures, duration of procedures and number of attempts were recorded bedside demographic data.

Results:
As the preliminary results of the ongoing study; 40 infants (20 in WG, 20 in RG) were enrolled with a mean gestational age of 27.6±2.4 and 29.0±2.8 weeks and 995±358 g and 1136±264 g of birth weight respectively. Perinatal and baseline demographic characteristics did not differ between two groups. Duration of the procedure, the number of attempts and mean NPASS scores at each time point were lower in WG than RG, but not statistically significant. NPASS scores of patients during skin disinfection were significantly higher than the scores during needle insertion in RG (p=0.02).

Conclusions:
Skin disinfection with povidone-iodine at room temperature can be more painful than needle insertion. To decrease pain in preterms, simple interventions can create big differences.

none declared
ID 341 - POSH-PREVENTION OF SIGNIFICANT HYPOTHERMIA: IMPLEMENTATION OF BAPM QUALITY IMPROVEMENT FRAMEWORK FOR IMPROVING NEONATAL HYPOTHERMIA AT A LEVEL 3 NICU.

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Background
Preterm hypothermia is associated with significant morbidity and increased mortality. The POSH—‘Prevention of Significant Hypothermia’ group was created in response to suboptimal numbers of preterm infants being admitted hypothermic (<36.5°C) to the NICU.

Methods
Through QI methodology 4 consecutive plan-do-study-act (PDSA) cycles have been completed, each related to a change idea identified through development of a driver diagram. 2017-2021 (Ongoing)
Cycle 1: EDUCATION: Targeted Training packages, induction teaching, power points, visual displays.
Cycle 2: ENVIRONMENT: Ventilation draft covers, towel warmer, Do Not Enter signage, room thermometers, baby thermometers in grab bags.
Cycle 3: SYSTEMS: Concept of thermal manager throughout stabilisation introduced to increase accountability. Normothermia checklist.
Cycle 4: EQUIPMENT: Neohelp plastic bags, Continuous skin temp monitoring throughout stabilisation.

Interventions were introduced in cycles in order to establish effectiveness but also to allow the opportunity to ensure practices were fully embedded before moving on to the next change cycle.
Data was collected via Badgernet which assisted in determining location of birth and its relation to admission temperature, along with any specific causes / trends/environment.
A monthly review of temperatures was published and discussed at daily safety huddles within the neonatal unit and labour ward highlighting both good and poor performances with the objective of increasing awareness and accountability.

Results
Admission temperature within target range of 36.5-37.5°C has improved from 58% (2017) to 90% (2021) with the implementation of POSH strategies for preterm deliveries <32 weeks gestational age. With cold (<36.5°C) admission rates reduced from 20% to 0% during 2020-21.
Continuous data monitoring through 2020-21(Table 1.0) identified an unintended consequence during the POSH initiative. There was increase in incidence of Hyperthermia contributing to failure in achieving target temperature range. From December 2020 the use of continuous skin temperature monitoring throughout stabilisation was introduced to combat this issue.

Conclusion
POSH intervention strategies using the BAPM QI frame-work for normothermia have significantly improved admission temperatures of babies born <32 weeks gestation. We recognise that continuous monitoring and measurement has helped to sustain improvement and outcomes.

none declared
ID 392 - QUALITY IMPROVEMENT ‘SEPSIS SPRINT’ USING LEAN METHODOLOGY TO IMPLEMENT AND IMPROVE MANAGEMENT OF NEONATES AT RISK OF EOS (EARLY ONSET SEPSIS)

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¹University Hospitals Coventry And Warwickshire NHS Trust, Coventry, United Kingdom

Background:
NICE guideline (CG149) recommends Intravenous antibiotics should be administered within 60 minutes of the decision to treat for neonates identified as at risk of developing EOS.

Method:
An inter-professional team was formed with various members and champions including ANNP’s, junior doctors, midwives and nurses. The project evolved from being a ‘Sepsis Sprint’ to ‘KP Sepsis Nuts’ Quality Improvement and educational initiative following the publication of the new NICE guideline on early onset sepsis in neonates (April 2021).

Barriers and interventions were identified by using QI tools including process mapping, fishbone analysis, human factors and driver diagram.

Data collection and change implementation using LEAN methodology and 4 quarterly PDSA cycles. The aim was to improve antibiotics administration time by 10% with each PDSA cycle.

Results:

PDSA Cycle 1: Mean time of antibiotic administration was 90 minutes.
Barriers identified:
1. Delay transfer of at risk neonates from labour ward to neonatal unit.
2. Documentation of time of decision to treat.

Intervention:
1. Sepsis trolley with drug kardex, care pathway and antibiotics was introduced.
2. ‘Sepsis Sprint’ educational programme was delivered by integrated maternity and neonatal ‘Sepsis Sprint’ champions.

PDSA Cycle 2: A reduction in antibiotics administration time from 90 to 68 minutes.
Barriers identified:
1. Incomplete documentation.
2. Early identification of at risk neonates.

Intervention:
1. Introduction of EOS risk screening proforma and algorithm.

PDSA Cycle 3: A reduction in antibiotics administration time from 68 to 52 minutes.
Barriers: Difficult cannulation.

Intervention:
1. ‘Sepsis Sprint’ QI evolved into ‘KP Sepsis Nuts’ QI programme with consolidated aim to:
   i) Continue to improve and meet antibiotic administration target.
ii) Introduce the ‘Kaiser Permanente’ sepsis calculator tool to improve antibiotic stewardship without impacting on outcomes.
2. Use of Badgernet sepsis screening form.
3. Education and information sharing at the daily unit safety huddle.
4. Bi monthly recording of results at the local Maternity Safety huddle.

Conclusion:
By using QI tools we have managed to reduce the mean intravenous antibiotic administration time from 90 to 52 minutes, a 42% improvement, enabling delivery of safe, effective and efficient care making the process ‘Lean’.

Intravenous antibiotics administration in minutes
None declared

NICE Guideline recommends < 60 minutes
ID 437 - A SINGLE INTERVENTION CAN INCREASE BREAST MILK RATE AT HOSPITAL DISCHARGE: AN EXPERIENCE FROM A NEW NICU LEVEL 4 IN THE MIDDLE EAST

Mrs Victoria Knowles1, Mrs Nqobile Sigola1, Mrs Josephine Powell1, Mrs Jovel Manuel1, Mrs Damilola Olagunju1, Mrs Sheila Okorafor-Ikechukwu1, Mrs Claire Cowsill1, Mrs Agnes Despi1, Mrs Ada Vahtrik1, Mrs Nalini Mantilla1, Mrs Amna Almulla1, Professor Charlotte Tscherning1, Doctor Ana Leslie1
1Sidra Medicine, Doha, Qatar

BACKGROUND:
The importance of the breastmilk for the newborn is unquestionable and it is well known its several benefits. In the situation whereas the dyad mother-newborn is separated due to prematurity and congenital anomaly, the process of expressing colostrum and breast milk can be challenging for parents who experience various levels of stress and anxiety. Our aim was to explore the effect of a single breastfeeding promotion strategy on the rate of infants receiving any breast milk upon hospital discharge.

METHODS:
We developed a breastfeeding promotion strategy in a newly quaternary hospital in the Middle East in 2019. Our hospital represents a national referral center for expectant mothers carrying newborns with congenital anomaly and the NICU is composed by a total of 39 beds. The intervention consisted in providing to the mother prenatally a package we called “Early Express Colostrum Pack”, containing a pair of muslin cloths (one to be placed at beside inside the incubator and the other to stay with the mother, to provide sensory stimulation to release oxytocin hormone), syringes, a personalized leaflet from the Institution with information about expressing colostrum. Most of the times, the packs were given during the prenatal period or immediately after birth. The outcome measured was the number of infants receiving any amount of breast milk upon hospital discharge.

RESULTS:
Data was collected over a period of 36 months, from January 2018 to December 2020. A total of 1095 patients were admitted to NICU. The type of milk was recorded from all discharge notes and was classified in Exclusively Breast Milk (EBM), Formula and Mixed (figure 1). It was found that in 2020, more babies went home on EBM (p 0.01) and less babies on Formula (p < 0.00) compared to 2018. Also, compared to 2018, less babies went home on Formula in 2019 (p < 0.00). More babies went home in Mixed diet in 2019 compared to 2018 (p 0.02). No significant difference between the type of milk between 2019 and 2010.

CONCLUSION:
A single intervention led to an increased percentage of infants receiving breast milk at the time of NICU discharge.
Type of milk at discharge: Exclusively Breast Milk (EBM), Formula and Mixed in 2018, 2019 and 2020. All authors declare no potential conflict of interest.
ID 457 - NURSES’ PERCEPTIONS OF DEVELOPMENTAL CARE PRACTICES IN NICU: A COMPARATIVE INTERNATIONAL STUDY

Professor Marilyn Aita¹,²,³, Mrs. Gwenaëlle De Clifford-Faugère⁷, Professor Sébastien Colson³,⁴, Professor Nancy Feeley³,⁵,⁶

¹Faculty of Nursing, Université de Montréal, Montreal, Canada, ²Research Centre CHU Sainte-Justine, Montreal, Canada, ³Quebec Network on Nursing Intervention Research, Montreal, Canada, ⁴Aix Marseille Université, Marseille, France, ⁵Ingram School of Nursing, McGill University, Montreal, Canada, ⁶Centre for Nursing Research and Lady Davis Institute, Jewish General Hospital, Montreal, Canada, ⁷Faculty of Nursing, Université de Montréal & Aix Marseille Université, Montreal, Canada

BACKGROUND.
Developmental Care (DC) is a practice aimed at reducing stress in preterm infants and promoting their neurological development during their hospitalization in the Neonatal Intensive Care Unit (NICU) and should be implemented internationally to promote infants’ health worldwide. Although, some variations at an international level in nursing practices related to the implementation of DC may exist in NICUs. The objective of our study was to compare, between NICUs in Quebec and France, the nurses’ perceptions about four DC practices: family-centered care (FCC), skin-to-skin contact (SSC), control of the neonatal environment (light and sound) and pain assessment and management.

METHODS.
The comparative study was conducted in four different NICUs units; two in Quebec and two in France. A convenience sample of 202 nurses were recruited (109 nurses from Quebec and 93 from France). Nurses completed self-reported validated questionnaires with Likert-scale response about the four DC practices. Student t test for independent samples and ANOVA with Tukey LSD comparisons were used to compare the nurse’s perceptions between the different NICUs.

RESULTS.
For FCC, nurses from France had significantly higher total score compared to those in Quebec (p=.045). Scores of nurses’ satisfaction about sound and light level was significantly higher for the ones in Quebec compared to the ones in France (respectively p=.000 and p=.009). For SSC, significant difference was observed between the nurses’ scores with lower scores for nurses the ones in Quebec compared to those in France related to attitudes (p=0.004), training (p=.043) and implementation (p=0.016). Scores of nurses’ perceptions of neonatal pain were significantly higher for the NICU in France than for the Quebec NICU for attitudes (p=0.008), signs of pain (p=0.031) and interventions for pain management (p=0.004).

CONCLUSION.
Our findings encourage to further explore care in NICU in France supporting nurses’ practices of FCC, SSC and pain assessment and management to guide care in Quebec. Likewise, for the control of light and sound, exploring care Quebec could guide NICU care in France. Our study offers benchmarking comparisons between nurses’ practices of DC in Québec and France and offers guidance to improve health outcomes of preterm infants worldwide.

none declared
ID 461 - PILOTING THE E-LEARNING MODULE OF THE CLOSE COLLABORATION WITH PARENTS PROGRAM

Psychologist, PhD Sari Ahlqvist-Björkroth1, Dr. Martina Moorkamp2, Instructional Designer, M.S. Janto McMullin3, Professor Liisa Lehtonen1
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Background
Close Collaboration with Parents is an educational intervention for neonatal intensive care staff. The intervention aims to improve the skills of the staff to collaborate with parents and to support parenting during hospital care. The intervention has been implemented and studied in 10 NICUs in Finland. It has been shown to improve family-centered care practices of the NICUs, to increase parent-infant closeness, and to decrease maternal depressive symptoms. Now, we have developed an e-learning module to increase the feasibility and fidelity of the intervention implementation. The aim of this pilot study was to explore the acceptability and feasibility of the e-learning module.

Method
The e-learning module was implemented in two neonatal units, one in Finland and one in Melbourne, Australia, between June and September 2020. We recruited 20 health care team members from the Finnish unit and 17 from the Australian unit. The acceptability was evaluated Technology Acceptance Model (TAM) questionnaire. The feasibility was evaluated by monitoring the users’ behavior using Google Analytics and Hotjar software. The module also included some questions about the feasibility of each phase of the intervention.

Results
The acceptability was rated from moderate to good. Feasibility data showed that module was easy to access and its completion took about four hours. Furthermore, the content of the module was evaluated understandable, but it was not experienced as novel. The videos with interactive activities were experienced as moderately useful for learning. Importantly, the participants reported high motivation to learn the skills that were included. Thirty percent of the staff members in the Finnish unit and 17% in the Australian unit completed the whole module.

Conclusion
The results of the pilot study showed that module was well accepted. The module would benefit of further development to improve the completion rates. The completion of the module may require dedicated work time. The module could also include incentives (e.g. diploma), which can be used as a credit for continuous professional education.

None declared
ID 465 - KANGAROO MOTHER CARE REDUCES THE STRESS AND BALANCES THE MATERNAL HORMONAL STATUS

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Background. Preterm delivery with further admission and treatment of an infant in the neonatal intensive care unit (NICU) compromises bond and relationship between parents and child and may potentiate feelings related to parental stress. The importance of reducing maternal stress is crucial as it negatively reflects on child development, behaviour and other long-term outcomes. The purpose of the study was to assess the efficacy of skin-to-skin contact in maternal stress reduction.

Materials and methods. 30 mothers of very and extremely preterm infants in the NICU participated in the research. Maternal stress level was assessed by measuring salivary oxytocin and cortisol concentration by enzyme immunoassay method. The overall design was a baseline-response design. Saliva was collected before (baseline) and after skin-to-skin contact.

Results. Maternal oxytocin levels were significantly increased from baseline (50.75 [21.19; 83.96] pg/ml) after skin-to-skin contact (83.43 [45.01; 169.1] pg/ml), p<0.001. Maternal cortisol levels were significantly decreased from baseline (0.212 [0.123; 0.378] μg/dL) after skin-to-skin contact (0.096 [0.077; 0.156]) μg/dL), p<0.001.

Conclusion. Mothers of extremely and very preterm infants in the NICU experience severe stress, which is characterized by hormonal imbalance: an increase in the level of the stress hormone cortisol and a decrease in the anti-stress hormone oxytocin. Kangaroo mother care with skin-to-skin contact helps to reduce the stress and balances the maternal hormonal status.

None declared
ID 469 - MOTOR-RELATED HEALTH CARE USE AMONG 5-YEAR-OLD CHILDREN BORN EXTREMELY PRETERM WITH MOVEMENT DIFFICULTIES: RESULTS FROM A EUROPEAN COHORT

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Background
Motor problems are common among children born extremely preterm (EPT) and may be responsive to early intervention. The objective of this study is to determine the proportion of five-year-old children born EPT with movement difficulties (MD) or cerebral palsy (CP) receiving motor-related health care (MRHC), as well as factors associated with receiving MRHC.

Methods
The study includes children born <28 weeks’ gestation from a prospective area-based cohort of very preterm births in 19 regions of 11 European countries in 2011-2012. Perinatal data were abstracted from medical records in obstetric and neonatal wards. At five years of age, children were assessed with the Movement Assessment Battery for Children – 2nd edition (MABC-2), and parents completed a questionnaire about family characteristics, child health, including cerebral palsy (CP) diagnosis, socio-emotional problems and health care (HC) use. MRHC was defined as visits with any HC provider specialized in the assessment or treatment of motor function in the past year. We analysed MRHC use among children classified by the MABC-2 as at-risk of MD (6th to 15th percentile), as having significant MD (SMD; ≤5th percentile) or with CP. Of 1,654 children eligible for the five-year follow-up, 807 (48.8%) were included in the analysis of whom 463 (57.4%) had MD, SMD or CP. Associations between receiving MRHC and perinatal characteristics and socio-emotional problems among children at risk of MD or with SMD were explored using multivariate logistic regressions.

Results
89.1% of children with CP received MRHC, compared with 42.8% of children with SMD and 25.9% at risk of MD. Proportions were similar for children with CP across countries, but varied from 23.3% to 66.7% for children with SMD. Among children at risk of MD or with SMD, receiving MRHC was associated with unemployment in the household, gestational age of 25 weeks, severe neonatal morbidity, receiving other specialized or general HC, socio-emotional, conduct or hyperactivity/attentional problems. Not receiving MRHC was associated with non-European born mothers.
Conclusion
SMD among five-year old children born EPT without CP were frequent, but fewer than half received MRHC. Detailed recommendations with specific HC actions for EPT children may increase awareness and treatment of MD.

None to declare
ID 500 - A QUALITY IMPROVEMENT PROJECT, REDUCING THE INCIDENCE AND TRANSMISSION OF ESBL COLONISATION BY IMPROVING PRACTICES ON THE NEONATAL UNIT.

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Background

An outbreak of ESBL (Extended Spectrum Beta Lactamase) highlighted the need to review infection control practices on the neonatal unit. These infections are often hospital acquired and transmitted between patients. The aim of our quality improvement project was to introduce an infection control bundle to reduce the incidence of ESBL on the Neonatal Unit.

Methods

An interprofessional team used the quality improvement tools including process mapping, fish-bone and driver diagrams to identify the target areas and change ideas, which were introduced in successive PDSA cycles. The changes introduced included writing a guideline, updating the LocSSIP proforma (Local Safety Standards for Invasive Procedures), bed space management (side tables and single patient use gloves and hand disinfectants), individual washing bowls, a washing babies checklist, hand hygiene posters and the addition of Infection Prevention and Control (IPC) Guardians.

An educational initiative by the team champions incorporated the tools of vocal advocacy, role modelling, promoting system changes and challenging practices.

A staff survey was undertaken to understand awareness and culture towards washing babies in the neonatal unit. Through the PDSA cycles, compliance of the process measures was monitored and discussed in daily morning safety huddles and displayed on the improvement board using run charts. Daily bed space tracking was commenced to identify any cross contamination and root cause analysis was undertaken.

A “know your bugs and PPE” poster was produced and displayed in clinical areas.

Results

The staff survey showed awareness of the bathing guideline was 59.1%, understanding was 66.7% and only 36.4% felt the babies’ hygiene needs were met.

Baseline data highlighted poor compliance (10%) of documentation on washing babies. Following implementation of change ideas (bath captains, bowls and checklist), compliance improved to 88%.

LocSSIP documentation compliance ranged between 75-90% with a special cause variation, dropping to 48% during changeover of trainees.

Preliminary data from microbiology has shown a reduction in overall ESBL infections and currently the unit is 100 days ESBL-free.

Conclusion

An interprofessional team approach with carefully planned QI methodology led to successful implementation of improvement measures and change in infection prevention practices.

None declared
ID 554 - IMPLEMENTING DELIVERY ROOM CUDDLES AS PART OF STANDARD CARE FOR BABIES BORN < 32 WEEKS GESTATION – AN OBSERVATIONAL STUDY ON SAFETY

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Background:
Imperial neonatal service has implemented delivery room (DR) cuddles along the strong culture of Family Integrated Care. Bonding is challenging for parents with a baby born extreme prematurely. Visual and physical contact in the delivery room as a first cuddle potentially can help the bonding process but so far there is limited evidence about the safety of this intervention.

Methods:
Our aim in this observational study was to assess safety of the DR cuddles for babies born < 32 weeks’ gestation. As part of the stabilisation for babies born < 32 weeks, if certain safety criteria met during resuscitation, parents were offered a short 5-15-minute delivery room cuddle while covered in plastic bag and on respiratory support supervised by a consultant neonatologist. We collected data about the safety of the cuddles such as admission temperature, accidental extubations, changes in respiratory support, admission time to the unit, and availability of colostrum within 24 hours.

Results:
Between Oct 2018 and Feb 2021, 99 families experienced delivery room cuddles after stabilisation. Retrospective control group of 130 infants was selected from admissions between Jan 2017 and Dec 2018. GA age range: Cuddle group 22+5 to 31+6, Control group 23+1 to 31+5 weeks. Birthweight range: Cuddle group 430-2044g, Control 500-1800g. No accidental extubation or respiratory complications were noted in the DR cuddle group. There was no increased risk of hypothermia: 13/99 (13%) had admission temperature < 36.5 0C in the DR cuddle group vs 13/130 (10%) in the control group. 95/99 (96%) neonates were admitted within 1 hour of life in the DR cuddle group and 128/130 (98%) in the control group. 59/99 (60%) neonate received colostrum within 24 hours from the cuddle cohort.

Conclusion:
We present the largest cohort of patients showing that delivery room cuddles in babies born < 32 weeks’ gestation are feasible and can be safely implemented as standard of care.

None declared
ID 545 - THE CVP NEON@T: A QUALITY IMPROVEMENT PROJECT TO ENHANCE INFANT AND PARENTAL OUTCOMES IN NICU

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BACKGROUND.
NICU nurses play a leading role in improving neonatal and parental outcomes, including the promotion of breastfeeding, skin-to-skin contact (SSC), developmental care (DC), and family-centered care (FCC). Through a quality improvement (QI) project, we developed a virtual community of practice in neonatology - CVP Neon@t - among nurses researchers and nurses clinicians leaders, to share resources, reduce duplication of practice-improvement efforts and harmonize nursing care practices across all level III NICUs in Quebec. An aim of our QI project was to evaluate the effects of the CVP Neon@t’s activities on nursing care practices’ indicators pre- and post-implementation.

METHODS.
A multiple case study was conducted to compare indicators of the targeted nursing care practices among the 6 NICUs pre- and post-implementation of the CVP Neon@t activities. Indicators related to breastfeeding were assessed via chart review (N=179 charts pre- and N=144 charts post). Across the 6 NICUs, N=98 (pre) and N=63 (post) parents completed validated questionnaires, infant touch and SSC, NICU light and noise levels, as well as FCC.

FINDINGS.
Breastfeeding. Proportion of infants who received breast milk at least once during their hospital stay increased from 81.6% in pre to 97.2% in post. SSC (touch). In pre, 29.6% of the infants were touched by a parent for the first time within 1-hour of birth and this proportion increased to 40.3% in post. Light intensity and sound levels. The proportion of parents who felt that the light and sound intensity was about right in the NICU was similar in pre and post with respectively, 84.3% vs. 90.4%, 75.6% vs. 85.7%. Family-Centered Care. The mean total score for parents’ perceptions of FCC in the NICUs increased from 65.1 pre- to 66.6 post.

CONCLUSIONS.
The CVP Neon@t’s activities improved the rate of breastfeeding and decreased the time to first parent-infant touch in the NICU. Parents’ perceptions of light and noise levels in addition to FCC improved following implementation of the CVP Neon@t activities across all NICUs. The CVP Neon@t’s goal is to guide the improvement of nursing care practices for the benefits of all infants and families in Quebec NICUs.

None declared