**Background** Newborns frequently need to be transferred to level-III-centers shortly after birth. Especially in very low birth weight infants, these postnatal transports are correlated with increased risk for intraventricular hemorrhage. Despite specifically designed incubators, infants are exposed to a considerable amount of mechanical vibrations (MV) that are presumed to be one of the major risk factors.
**Aims** The objective was to investigate the extent of MV and the frequency spectrum occurring during neonatal transport.
**Methods** Two types of incubators (ITI-5400 (INC1), Air-Shields-Isolette-TI-500 (INC2), both DRÄGER, Lübeck, Germany) were tested during simulated neonatal transport by ambulance vehicle on various road types. MV were recorded by highly-sensitive accelerometers (LIS331DL, STMicroelectronics, Geneva, Switzerland) and analyzed by using Fast-Fourier-Transform and Continuous-Wavelet-Transform.
**Results** MV occurring in INC1 during transport had peak accelerations up to 0.91 g (8.93 $m/s^2$) and a dominant frequency range of 10–14 Hertz. Measurements with INC2 showed significantly higher peak accelerations with values up to 1.60 g (15.70 $m/s^2$) and further a distinct peak in the frequency spectrum at approximately 15 Hertz. Total detected MV within the investigated frequency band of 1–50 Hertz were up to 8 times higher in INC2 compared to INC1.
**Conclusions** We were able to demonstrate that during neonatal transport newborns might be exposed to almost twofold gravitational acceleration, whereby accelerations and vibration frequencies differed distinctly between incubators. On the basis of these data implementation of vibration analysis in approval procedures of transport incubators has to be considered.

## 1758 NEONATAL OUTCOMES OF VERY PREMATURE INFANTS BORN AFTER IN VITRO FERTILIZATION

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Advances in assisted reproductive technology such as in vitro fertilization (IVF) is known to be associated with a high rate of multiple pregnancy and prematurity. However reliable data on neonatal outcomes of infants born preterm after IVF are lacking.

A cohort study was conducted to compare neonatal outcomes of 90 very premature infants born after IVF at University of Miami/Jackson Memorial Hospital between 2005 and 2011, with a control group born after natural conception, matched by gestational age. The IRB approved the study.

Mothers of infants born after IVF were older (34 vs 28 yrs $p<0.001$) and had lower parity (0 vs 1 $p<0.001$). Gestational age and birth weight were not different between groups. More IVF infants were females (56% vs 40% $p<0.01$) and were born by C-section (94% vs 88% $p<0.03$). The only difference between groups was a higher 1 minute Apgar score in IVF infants (6.2 vs 5.1 $p<0.002$). No differences in 5 and 10 minutes Apgar's score, need for surfactant, duration of mechanical ventilation and need for $O_2$ were found. There were no differences in the incidence of major morbidities, IVH, BPD, NEC, sepsis, and PDA ligation. Mortality and LOS were similar in both groups.

These results demonstrate that when compared with infants of similar gestational age outcomes of IVF premature infants are not different from naturally conceived infants. The reported higher risk for poor outcomes in IVF infants is most likely related with the higher risk of multiple gestation and prematurity.

## 1759 REDUCTION IN CENTRAL LINE ASSOCIATED BLOODSTREAM INFECTIONS BY INTRODUCING A QUALITY IMPROVEMENT PATHWAY 'CLEAN LINE'

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**Background** Central lines (umbilical arterial/venous catheter, central venous catheter) are commonly used for NICU patients.

The most common complication is the Central Line Associated nosocomial Bloodstream Infection (CLABSI).

Reducing CLABSIs improves short and long term outcome for premature newborn.

Implementing bundles of care may reduce CLABSIs.
**Aim** Does implementation of "bundles of care" reduce CLABSIs/1000 catheter days?
**Methods** In 2010 a task group 'Clean Line' (neonatologist, Nurse Practitioner, hygienist, NICU nurse and ward manager) defined five bundles of care:

1. optimal insertionconditions,
2. handhygiene,
3. daily line care,
4. daily review of line necessity and
5. daily inspection of insertion site.

For each carebundle the procedures were evaluated on an evidence-based manner and changed where needed. Video demonstrating best practice, multidisciplinary education and short checklists for monitoring compliance were used for implementation.

In 2011 the pathway started with the first two bundles of care. Data of CLABSIs and catheter days were compared with a historical cohort (2007). CLABSI is defined as clinical sepsis >72 hours after birth with a positive blood culture without other focus.
**Results**

Abstract 1759 Table 1

| Number | 2007 | 2011 |
|---|---|---|
| Patients (catheters) | 75 (124) | 206 (345) |
| Catheterdays (no.) | 795 | 1727 |
| CLABSI (no) | 16 | 11 |
| CLABSI/1000 days | 20,1[1] | 6.3[1] |

[1]Difference 13.8 (CI 3.2–24.3).

**Conclusion** A NICU quality improvement pathway with implementation of bundles of care can reduce the number of catheter-related infections/1000 catheter days.

## 1760 NEONATAL RE-ADMISSIONS WITH FEEDING DIFFICULTIES IN A LARGE DISTRICT -GENERAL HOSPITAL IN UK: MORE SUPPORT NEEDED FOR BREASTFEEDING MOTHERS?

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**Background and Aims** Readmission of neonates due to weight loss and feeding difficulties to hospital following discharge continues to be a concern. This audit was done to study the incidence, clinical characteristics and laboratory markers of neonates admitted with feeding difficulties and weight loss.
**Methods** Clinical notes and discharge summaries of babies ≤ 28 days old admitted to hospital over a period of ten months from June 2011 to March 2012 were reviewed. Information was recorded regarding age at admission, weight loss, final diagnosis and feeding method.
**Results** A total of 114 neonates were re-admitted to hospital during this period. Of these 34 (30%) were due to feeding difficulties ± jaundice. 29/34 of these were due to weight loss related to breastfeeding. Other 5 neonates were bottle fed and needed treatment for jaundice ± supervision of feeding in hospital. Among the 29 breast fed babies, 19 (65%) had significant weight loss of >10%, 9 had