## G94(P) ABSTRACT WITHDRAWN

## G95(P) SUDDEN INFANT DEATH SYNDROME AND CAR SEATS: A SYSTEMATIC LITERATURE REVIEW

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**Aims** Sudden infant death syndrome (SIDS) was responsible for 191 infant deaths in England and Wales in 2015.[1] SIDS rates have declined substantially in recent years, thanks to successful campaigns about known modifiable risk factors such as smoking in pregnancy and sleeping positions. [2] Guidance about at-home sleeping to reduce SIDS (such as avoidance of co-sleeping, bedding and temperature) is widely available. However, guidance about safe out-of-home sleeping, for example in buggies or car seats, is more limited. We aimed to assess the evidence about the role of car seats in SIDS.

**Methods** We conducted a systematic literature review in PubMed using the search terms 'sudden infant death syndrome AND car seat' or 'SIDS AND car seat'. Article abstracts were screened for relevance. Articles discussing infant death in a car seat from an explained cause were excluded.

**Results** A systematic literature review revealed 10 results. Of these, abstract screening excluded 7 results for describing booster seats (n=2), and explained deaths such as injury or hanging (n=5). Of included articles, one retrospective review of 11 717 infant deaths identified that out-of-home SIDS were 2.6 times more likely to be associated with a carseat or stroller.[3] A second retrospective review highlighted 14 car seat associated unexplained infant deaths out of 1465 autopsies, 10 of which were outside of travel use.[4] This supports recommendations that car seats should be used for travel only.[5]3 further articles identified from references highlighted work demonstrating reduced oxygen saturations in infants in simulated moving car seats.[6] This supports a separate finding that attributed 48% of car seat associated deaths to positional asphyxia.[7] Longer periods in car seats also increase the risk of airway obstruction.[8]

**Conclusions** Although car seats are an important legal requirement,[9] evidence suggests that prolonged periods in a car seat are dangerous for infants. However, there is a very limited evidence base for guidelines on exactly how long car seats should be used in infants. There is an urgent need for further research into the interplay of car seats and SIDS in order to produce practical advice for parents.

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## G96(P) ARE WHITE CELLS IN CHILDREN'S URINE DIAGNOSTIC OR A DISTRACTION, AND DOES COLLECTION AND CULTURE METHOD MATTER? NEW DATA FROM 4910 ACUTELY UNWELL CHILDREN

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**Aims** To describe the relationship between urine white cell count (WCC) and the microbiological diagnosis of UTI in acutely unwell children, and explore the influence of culture and collection method.

**Methods** Multi-centre, prospective, cohort study of acutely unwell children aged 3 months-5 years presenting to UK primary care whose urine samples were collected by clean catch or nappy pad, and cultured by both a Central Laboratory (CL) using spiral-plating, and Local NHS Laboratories (LL) using standard practice. Positive and negative predictive values (PPV and NPV) of diagnosing UTI were calculated for WCC $\geq$100/mm$^3$ and WCC $\leq$10/mm$^3$ respectively, comparing laboratories and sampling methods.

**Results** Of 4910 samples, 1.9% had UTI in the CL and 5.3% in the LL.

Table 1 outlines the PPV of WCC $\geq$100/mm$^3$ and NPV of WCC $\leq$10/mm$^3$ for diagnosing UTI by laboratory culture and sampling method.

**Abstract G96(P) Table 1**

| | CL culture | | | LL culture | | |
|---|---|---|---|---|---|---|
| | All Samples | Clean Catch | Nappy Pad | All Samples | Clean Catch | Nappy Pad |
| **PPV of WCC≥100/mm$^3$** | **23.9%** [17.5–31.6%] | **33.3%** [25.0–42.8%] | **0** | **30.3%** [22.7–39.1%] | **38.7%** [29.3–49.0%] | **6.9%** [1.8–23.6%] |
| **NPV of WCC≤10/mm$^3$** | **99.0%** [98.7–99.2%] | **99.3%** [98.9–99.5%] | **98.6%** [98.3–98.9%] | **95.8%** [95.4–96.2%] | **97.7%** [97.2–98.2%] | **93.6%** [92.9–94.2%] |

**Conclusions** Local NHS Labs diagnose almost 3x more UTIs than a reference Central Laboratory. Many of these may be false positives.

A WCC $\geq$100/mm$^3$ poorly predicts UTI on culture in acutely unwell young children consulting in primary care.

Despite WCC$\leq$10/mm$^3$ having a good NPV regardless of collection or culture method, 37 of the 92 positive CL cultures (40%) had WCC$\leq$10/mm$^3$.

**Recommendation** We propose a diagnostic algorithm selectively utilising spiral-plating culture methods to potentially minimise