

TRB EMS Subcommittee ANB10(5)

EMS Safety Summit 2012 Safety Systems, Strategies and Solutions

Transport of Vulnerable Populations Neonates/Peds

Nadine Levick MD, MPH

Chair ANB10(5)

CEO, Research Director EMS Safety Foundation

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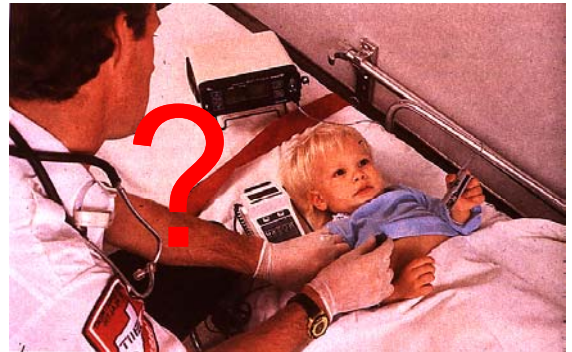
Peds/Neonate Transport Safety Awareness

- Need information that is
 - Relevant
 - Accessible

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It is a **SYSTEM!**

- Child in a vehicle with other occupants and equipment
- Vehicle in a Fleet
- Fleet in a region

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And it could be...

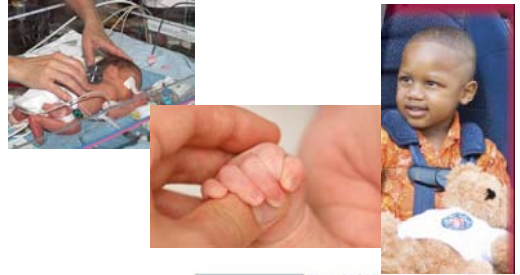
- Your dedicated vehicle
- Someone else's specialized vehicle
- Someone else's general vehicle

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Team size drives vehicle size...

- It is ALL part of one system

Yet.. The infant and child is the same size range globally



Australia



USA



Team size drives vehicle size...



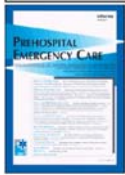
Specialized issues

- Nitric oxide
- ECMO

Peds and Neonate Transport

- Special population
- Unique challenges
- Potential pitfalls
- Innovative approaches
 - USA
 - Internationally

We are part of the problem...



Prehospital Emergency Care

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- What other considerations do we need to look at when building around a “traditional” ambulance box design (understanding that it is not ideal, but necessary)

- How do you approach proper ergonomic design in general, or who do you suggest we contact to do proper ergonomic design



Preemie infant characteristics

- Typical age / size of infant when discharged
 - Ideal: Gestational age of 34 weeks
 - Approximately 1800 grams (~3.96 lbs)
 - Many are bigger: 1800 – 2200 grams (~4.85 lbs)
 - Non-survivors are usually very small
- Any specially made car seats for preterm infants?
 - No. Inserts are usually used



Bigger is not necessarily better.....



Bigger may not be better....

- Can you reach all the equipment you need to
- Can you create a skill specific team with the necessary skills
- What skills per patient ratio is key

Innovation from Pittsburgh Children's Hospital





- **Advisory Board and Technical Expert Panel**
 - EMS Safety Foundation, Director of Human Factors and Ergonomics
 - Chris Fitzgerald, Injury and Risk Management



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Australia, NETS Melbourne

NETS | NETS Transport
NETS Transport

Newborn Emergency Transport Service (Victoria)

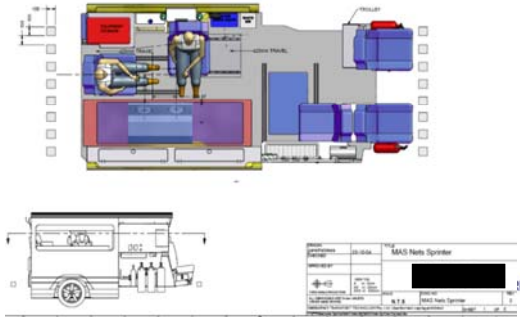
Launch of Custom-built Ambulance for the Newborn Emergency Transport Service (NETS), Victoria



Special ambulance to transport newborns

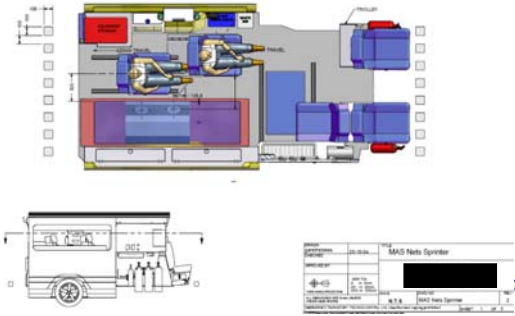
The Minister for Health, the Hon Bronwyn P... art ambulances to safely transport Victoria's them safely back to neonatal intensive care

Melbourne, Australia Neonatal Ambulance – stationary mode



MMS Plans Operator

Melbourne, Australia Neonatal Ambulance – in transit mode



Australia - NSW Peds/Neonatal Vehicle - NETS



NSW Australian Peds/Neonatal Vehicle



Foldable Child seats more compact and easier to store



Existing Technical Literature

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Avoid approaches that don't factor in systems hazards



Basic science engineering research

- What are the optimal design features for a premature infant ATD
- How to best build a transport system that provides transport safety and pt access and thermoregulation
- A number of initiatives are now underway

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Deceleration Sled tests

(upon impact) 24 G, 30mph



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Aprica 2.5 infant dummy



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Initiative underway for neonate ATD

- An interdisciplinary, international project to develop a meaningful model to be integral in the design of optimizing the safety of the system

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Peds Neonates Summary

- EMS Transport of infants and children
- Interfacility transport of neonates, infants and children
- Team configuration
- Hours of service
- Fleet/vehicle spectrum and technologies
- Vehicle design issues - occupant protection and human factors
- Occupant restraint systems
- Operational Policies

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