Transfer of critically ill patients is one of the most challenging aspects of medical practice. In Ireland different structures exist to facilitate the transfer of these patients, namely:

• NNTP - National Neonatal Transfer Programme
• MICAS - Mobile Intensive Care Ambulance Service

We conducted a retrospective review of MICAS and NNTP transfers for the past five years. We have also compared the organisation, equipment and training regimes between these services.

**NNTP**

**Organisation:**
- Established in 2001
- Serviced by teams from the three Dublin Maternity hospitals.
- Operates 365 days a year.
- Staffed by a neonatal registrar, a neonatal staff nurse from the hospital on call, and two drivers from the national Ambulance service.
- Dedicated coordinator with office support staff and a part-time medical director.

**Equipment:**
- Two custom fitted ambulances and a back up ambulance.
- A complete NNTP transport module is kept in each hospital.
- Specific module for air transport which is kept at Casement aerodrome. The module includes:
  - Incubator
  - Ventilator
  - Modes - CPAP, SIMV, PS
  - N2O therapy available
  - Exhaled Tidal volume monitoring
  - Humidification systems

**Training:**
- Paediatric SpR who has spent at least two months in NICU
- Focused training for doctors
- Air transport training
- Buddy system
- Outreach: STABLE programme.

**Transfer Data:**

| Year | Total Transfers | Regional-Dublin | Regional-Regional | To N.Ireland | To UK | To Eu | *
|------|-----------------|-----------------|------------------|--------------|------|------|---
| 2005 | 2006 | 2007 | 2008 | 2009 |
| 0% | 3% | 5% | 8% | 13% | 20% |

**MICAS**

**Organisation:**
- Established in Ireland in 1996.
- Operates Monday to Friday within normal hours.
- Staffed by an ICU Registrar, an ICU Staff Nurse and an Ambulance driver.
- The medical and nursing staff come from one of four Dublin Hospitals.
- There is no dedicated coordinator of office support staff.

**Equipment:**
- One custom fitted ambulance:
  - Ventilator: Servo i
  - Oxylog
  - Monitor: ECG, SpO2
  - N2O therapy available
  - Exhaled Tidal volume monitoring
  - Humidification systems

**Training:**
- Guidelines for transport of the critically ill have been formulated by both US and Irish Intensive care bodies.
- There is no formal transport training programme for anaesthetist in training.
- No outreach programmes for referring hospitals.

**Transfer Data:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Transfers</th>
<th>Regional-Dublin</th>
<th>Regional-Regional</th>
<th>To N.Ireland</th>
<th>To UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>2006</td>
<td>2007</td>
<td>2008</td>
<td>2009</td>
<td></td>
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<tr>
<td>0%</td>
<td>50%</td>
<td>31%</td>
<td>13%</td>
<td>4%</td>
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</tr>
</tbody>
</table>

**PAEDIATRIC TRANSFERS**

**Organisation:**
- Paediatric critical care in Ireland is centralised to the two Dublin Paediatric hospitals.
- Critically ill children are routinely transfers from the regions.
- Despite this no formal transport service exists.

**Equipment:**
- Our Lady’s Hospital for Sick Children has a specially built module for ground and air transport.

**Training:**
- No formal training programme or guidelines for transport of critically ill paediatric patients.

**Transfer Data:**

<table>
<thead>
<tr>
<th>Destination</th>
<th>In Dublin</th>
<th>Transfers to UK</th>
<th>Retrieval from UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Dublin</td>
<td>31%</td>
<td>56%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**SUGGESTIONS:****

- Audit of Paediatric transfers in Ireland to assess viability of establishing a dedicated transport programme.
- Improved training for anaesthetic trainees in transport of critically ill patients, including air transport.
- Use of simulation technology for training purposes.
- Use of web technology to improve information on transport services.
- Expansion of MICAS to a 365 day service.

**Acknowledgements:**
- Irish Air Corps / Defence Forces
- Jim Davenport, Our Lady’s Hospital for Sick Children, Dublin.
- Ann Boudin, National Neonatal Transport Programme, Rotunda Hospital
- Dr. Rory Dwyer, Beaumont Hospital

**References:**