Trends in the provision of neonatal care in England: changes in patient volume and staffing since 1996

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BACKGROUND

Since 2003 in England, neonatal services have been reorganised into managed clinical networks (MCNs). [1] Nurse staffing – particularly by those qualified in specialist (QIS) – has been associated with longer term neonatal mortality. [2] Few data are available looking at the effect of MCN reconfigurations on staffing and patient activity. We hypothesised that nurse staffing improved while activity remained stable over time.

OBJECTIVE

To investigate the impact of temporal changes in neonatal service provision on:
- nurse staffing ratios,
- admissions, and
- provision of respiratory support (CPAP or mechanical ventilation).

RESULTS

<table>
<thead>
<tr>
<th>Unit numbers</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>-</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>62</td>
<td>74</td>
<td>46</td>
</tr>
<tr>
<td>2011</td>
<td>43 (7)</td>
<td>72</td>
<td>44</td>
</tr>
</tbody>
</table>
123 units had data available at each time point. 7 Special Care (level 1) Units did not respond to the 2011 survey [level 2 = Local Neonatal Unit; level 3 = Network Intensive Care Unit].

<table>
<thead>
<tr>
<th>Cot numbers</th>
<th>SC</th>
<th>HD</th>
<th>IC</th>
<th>BAPM total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>1454</td>
<td>650</td>
<td>637</td>
<td>1929</td>
</tr>
<tr>
<td>2006</td>
<td>1455</td>
<td>420</td>
<td>602</td>
<td>1816</td>
</tr>
<tr>
<td>2011</td>
<td>1554</td>
<td>516</td>
<td>650</td>
<td>1974</td>
</tr>
</tbody>
</table>

Activity

Between 1997 and 2006, respiratory support provided for each cot increased by 36.4 (17.5 - 55.2) days (d), and by 1.17d (0.67 - 1.67) per admission; neither measure changed thereafter. The ratio of babies provided with respiratory support to the number of babies admitted increased from 0.23 (95% CI 0.21 – 0.25) in 1997 to 0.33 (0.30 – 0.35) in 2006 and to 0.39 (0.37 – 0.42) in 2011 – an increase of 69.6%.

CONCLUSION

Overall, the results show there were improvements in nurse staffing and better cot utilisation (more admissions per cot) between 1997 and 2011 in England. However, the ratio of actual to predicted numbers of nurses is lower – despite using a more conservative formula [3] – than the recommended 80% level. [4]

There was an increase in the number of babies requiring ventilatory support during this time. This was accompanied by an increase in the amount of support provided per baby and per cot, suggesting resources are being used more appropriately.

REFERENCES


ACKNOWLEDGEMENTS

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FURTHER INFORMATION

This poster can be downloaded from https://www.andremorgan.net
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