Immunisation Status in Children Receiving Care and Support in Wales: A National Data Linkage Study

Background
Not receiving vaccines, or receiving them early or late leaves children unprotected against preventable diseases. Children receiving support from social care services are a vulnerable group, whom face a range of health challenges, including incomplete immunisation. Identifying factors associated with suboptimal vaccine uptake may help improve vaccine timeliness and uptake.

AIMS
- Examine timeliness of vaccine receipt in children receiving care and support
- Assess the validity of the immunisation status flag

Method
Anonymised, individual data was acquired from the Secure Anonymised Information Linkage (SAIL) Databank using:

- National Community Child Health (NCCH) Database
- Children Receiving Care and Support (CRCS) Census

Timeliness of DTP1, DTP2, DTP3, DTP booster, MMR1 and MMR2 National Community Child Health (NCCH) Database

Validation of ‘up-to-date’ immunisation flag

Children aged at least 5.2 years
(n = 24,540)

Children not in the CRCS and aged at least 5.2 years
(n = 928,750)

Never on CPR nor CLA
(N = 12,480)

Ever on the CPR
(N = 6,225)

Never CPR but CLA
(N = 5,840)

Born on or after 24th June 1996
(n = 624,905)

CRCS cohort

Population cohort comparison group

Results
- 87% of children receiving care and support received at least one vaccine on time compared to 97% of the comparison cohort
- 8% of children receiving care and support were unvaccinated compared to 13% of the comparison cohort
- Early and delayed vaccines were more common in the CRCS cohorts

Proportion of children who received a vaccine on time, early, delayed or missing

<table>
<thead>
<tr>
<th>CRCS cohort</th>
<th>Never CPR nor CLA</th>
<th>Ever CPR</th>
<th>Ever CLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flag correct</td>
<td>41825 (73.7%)</td>
<td>15660 (70.1%)</td>
<td>10235 (74.5%)</td>
</tr>
<tr>
<td>Flag incorrect</td>
<td>14890 (26.3%)</td>
<td>6670 (29.9%)</td>
<td>3505 (25.5%)</td>
</tr>
</tbody>
</table>

- Immunisation flags were correct for ~70% of the CRCS cohort

Strengths & Limitations
- Large sample size
- Reduced parental recall bias
- Longitudinal monitoring of vaccine uptake

- Relies on administrative data being correct and up-to-date
- Limited to six childhood vaccines
- No in-depth analysis of yearly trends
- Variations in vaccine timeliness definitions make it difficult to make comparisons to other studies

Conclusion
- Children receiving care and support are more likely to be immunised than the general child population in Wales
- Care plans and health interventions have a positive impact on vaccine uptake
- More interdisciplinary co-ordination and planning is needed to improve vaccine timeliness

Funding: The CASCADE partnership receives infrastructure funding from Health and Care Research Wales (S13199). This study uses anonymised data held in the Secure Anonymised Information Linkage (SAIL) Databank, which is part of the national population data research infrastructure for Wales.

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