Regular GP consultations are associated with reduced rates of emergency care for children and young people with life limiting conditions

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Emergency care & primary care

• Children and young people with life limiting conditions have complex healthcare needs
  – 14-19% ‘clinically unstable’[1]
• In UK, care pre-16 is coordinated by paediatric specialist
  – Not all children and young people regularly see GP
• Children with medical complexity who have ‘well child visits’ have fewer hospitalisations in the US[2]
Research question

• Does seeing the GP regularly reduce emergency care?
  – Accident and Emergency (A&E) visits
  – Emergency inpatient admissions
  – Short emergency inpatient admissions (≤ 24 hours)
Study data

- **Primary care data (CPRD)**
  - Diagnostic data (Read codes) from:
    - GP consultations
    - Referrals
    - Diagnostic tests
    - Immunisations

- **Hospital data (HES)**
  - Diagnostic data (ICD-10) from:
    - Inpatient records

- **Apply Read code framework for LLC**

- **CPRD GP consultation**

- **Cohort with GP consultations, emergency inpatient admissions and A&E visits**
  - HES inpatient records
  - HES A&E records

- **Cohort of 0-25 year olds with LLC**
  - Apply ICD-10 code framework for LLC [1]
Defining regularity

Variability score = \frac{\text{Variance of consultation gaps}}{\text{Mean consultation gap}}
Referrals to emergency care

Emergency inpatient referrals from A&E

Emergency inpatient referrals from GP

A&E referrals from GP

% referred from specified source

Age

0 5 10 15 20 25
Modelling approach

Predictors
- Variability score
- Age group
- Ethnic group
- Gender
- Main diagnostic group
- Deprivation category
- Number of GP consultations
- Calendar year

Outcomes (count data)
- A&E visits
- Emergency inpatient admissions
- Short (<24h) emergency inpatient admissions

3 Models (one per outcome)
- Two levels (random intercept)
- Negative binomial regression
## Model results

<table>
<thead>
<tr>
<th>Variability score</th>
<th>A&amp;E visits</th>
<th></th>
<th>Emergency admissions</th>
<th></th>
<th>Short emer. Admissions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IRR</td>
<td>95% CI</td>
<td>IRR</td>
<td>95% CI</td>
<td>IRR</td>
<td>95% CI</td>
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<tr>
<td>≤ 10</td>
<td>1 (ref)</td>
<td></td>
<td>1 (ref)</td>
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<td>1 (ref)</td>
<td></td>
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<tr>
<td>&gt; 10, ≤ 25</td>
<td><strong>1.10</strong></td>
<td>1.04–1.15</td>
<td><strong>1.11</strong></td>
<td>1.05–1.16</td>
<td><strong>1.13</strong></td>
<td>1.06–1.20</td>
</tr>
<tr>
<td>&gt; 25, ≤ 50</td>
<td><strong>1.08</strong></td>
<td>1.03–1.14</td>
<td><strong>1.14</strong></td>
<td>1.09–1.20</td>
<td><strong>1.19</strong></td>
<td>1.12–1.27</td>
</tr>
<tr>
<td>&gt; 50</td>
<td><strong>1.03</strong></td>
<td>0.98–1.09</td>
<td><strong>1.10</strong></td>
<td>1.05–1.16</td>
<td><strong>1.15</strong></td>
<td>1.08–1.23</td>
</tr>
</tbody>
</table>
Interpretation

- Greater regularity is associated with less emergency care
- A causal relationship has not been demonstrated
- Smaller association for very irregular patterns
- Other factors important, e.g. consistency (poster 108)
- Regular GP attendance may have the potential to reduce emergency care
References
