Maximising the contribution of Advanced Paramedic Practitioners (APP)

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Outline

• Advanced Paramedic Practitioner Role
• Methodology
• Results
• Conclusion
• Future
Advanced Paramedic Practitioner

• Eligibility criteria
  • Five years paramedic experience (pro-rata)
  • Clinically relevant BSc

• Selection process
  • Clinical interview
  • OSCE assessment centre

• Education & development
  • MSc Advanced Practice
  • Rotational placements with GP and urgent care centre providers
Operational deployment

- Solo responders
- All categories of call
- 4 x operational sites
  - Brent
  - Croydon
  - Friern Barnet
  - Barnehurst
Methodology

• Ongoing review of clinical records and re-contacts
• Statistical modelling including regression analysis and case matching
• Aim: to develop a data model that allows us to better define marginal gains and value added by APP-UC versus BAU
Matching criteria

- Age (0-19, 20-39, 40-59, 60-79, 80-90)
- Time of day (0900-1659, 1700-0859)
- Time of week (weekday, weekend)
- Incident location
- Triage acuity (Cat 1-5)
- Presenting illness or injury
## Performance metrics

<table>
<thead>
<tr>
<th></th>
<th>APP-UC</th>
<th>BAU</th>
<th>MATCHED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 1,578</td>
<td>95% CI</td>
<td>n = 835,604</td>
</tr>
<tr>
<td>See and convey to ED</td>
<td>25% (22%, 28%)</td>
<td>64% (60%, 68%)</td>
<td>*</td>
</tr>
<tr>
<td>See and treat or refer</td>
<td>73% (69%, 76%)</td>
<td>27% (24%, 30%)</td>
<td>*</td>
</tr>
<tr>
<td>See and convey to other</td>
<td>2.50% (1.5%, 4%)</td>
<td>9% (6%, 15%)</td>
<td>*</td>
</tr>
<tr>
<td>On-scene time (Non-conveyance)</td>
<td>81 (78, 84)</td>
<td>61 (58, 64)</td>
<td>*</td>
</tr>
<tr>
<td>On-scene time (Conveyance)</td>
<td>83 (81, 85)</td>
<td>37 (35, 40)</td>
<td>*</td>
</tr>
<tr>
<td>Job cycle time</td>
<td>96 (93, 98)</td>
<td>92 (90, 95)</td>
<td>*</td>
</tr>
<tr>
<td>Multiple attendance ratio</td>
<td>1.32 (1.28, 1.36)</td>
<td>1.21 (1.18, 1.25)</td>
<td>*</td>
</tr>
</tbody>
</table>

Re-contact rate 2.5% @ 24 hours
## ED conveyance by condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>APP-UC</th>
<th>95% CI</th>
<th>BAU</th>
<th>95% CI</th>
<th>MATCHED</th>
<th>95% CI</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pains</td>
<td>34%</td>
<td>232 (26%, 44%)</td>
<td>78%</td>
<td>60,395 (78%, 79%)</td>
<td>*</td>
<td>69%</td>
<td>202 (59%, 78%)</td>
</tr>
<tr>
<td>Pain - Other</td>
<td>37%</td>
<td>177 (27%, 49%)</td>
<td>69%</td>
<td>71,084 (69%, 70%)</td>
<td>*</td>
<td>63%</td>
<td>144 (51%, 75%)</td>
</tr>
<tr>
<td>Other medical conditions</td>
<td>39%</td>
<td>166 (28%, 50%)</td>
<td>70%</td>
<td>70,416 (70%, 71%)</td>
<td>*</td>
<td>70%</td>
<td>136 (57%, 81%)</td>
</tr>
<tr>
<td>Pain - Back</td>
<td>24%</td>
<td>160 (15%, 36%)</td>
<td>68%</td>
<td>27,873 (68%, 70%)</td>
<td>*</td>
<td>70%</td>
<td>137 (58%, 81%)</td>
</tr>
<tr>
<td>Vomiting</td>
<td>34%</td>
<td>124 (22%, 47%)</td>
<td>72%</td>
<td>35,258 (72%, 74%)</td>
<td>*</td>
<td>64%</td>
<td>66 (45%, 80%)</td>
</tr>
<tr>
<td>Dizzy/near faint/loss of coordination</td>
<td>23%</td>
<td>75 (11%, 39%)</td>
<td>71%</td>
<td>27,090 (71%, 72%)</td>
<td>*</td>
<td>64%</td>
<td>53 (43%, 82%)</td>
</tr>
<tr>
<td>Urological</td>
<td>26%</td>
<td>65 (12%, 44%)</td>
<td>79%</td>
<td>13,236 (79%, 81%)</td>
<td>*</td>
<td>72%</td>
<td>36 (47%, 90%)</td>
</tr>
<tr>
<td>Head Injury – Minor</td>
<td>31%</td>
<td>64 (16%, 50%)</td>
<td>77%</td>
<td>31,135 (77%, 78%)</td>
<td>*</td>
<td>69%</td>
<td>51 (48%, 85%)</td>
</tr>
<tr>
<td>Generally unwell</td>
<td>56%</td>
<td>59 (37%, 74%)</td>
<td>74%</td>
<td>36,876 (74%, 76%)</td>
<td>*</td>
<td>65%</td>
<td>37 (40%, 85%)</td>
</tr>
<tr>
<td>Minor cuts &amp; bruising</td>
<td>10%</td>
<td>59 (2%, 26%)</td>
<td>54%</td>
<td>18,219 (54%, 56%)</td>
<td>*</td>
<td>40%</td>
<td>48 (20%, 61%)</td>
</tr>
<tr>
<td>Sepsis</td>
<td>96%</td>
<td>25 (NA)</td>
<td>98%</td>
<td>24,311 (98%, 98%)</td>
<td>-</td>
<td>100%</td>
<td>12 (NA)</td>
</tr>
</tbody>
</table>
Conclusions

- Significantly lower non-conveyance with APP-UC versus BAU
- Conveyance difference varies according to illness or injury
  - Need to establish optimal marginal gains with APP-UC
- Job cycle time comparable
- Lower re-contact rates than BAU
- Lower staff and vehicle costs than ambulance response
- Provides career development aiding retention and satisfaction
Future

• Further develop regression analysis and matching
• Incorporate further variables (e.g. NEWS2)
• Better understand marginal gains with APP-UC
• Health economic analysis
• Expansion of programme