Effectiveness of a Paramedic Assistant on Enrolment Rates for Prehospital Research Studies

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The Canadian C-Spine Rule was derived and validated using over 16,000 patients. Used by physicians, the rule can identify 99.7% of injuries. We are validating its use by paramedics in the field.
• Patient enrollment by paramedics in prehospital studies is often lower than expected, for a variety of reasons
Objectives

To determine the impact of a peer-paramedic research assistant on the enrollment rate in the Canadian C-Spine Rule (CCR) Prehospital Validation Study
Methods

• Ottawa Paramedic Service PCP and ACP Paramedics voluntarily followed the Canadian C-Spine Rule

• Paramedics continued to immobilize all trauma patients according to their pre-existing protocols, and filled out a study form

• Research Ethics Board approved waiver of informed consent
Methods

We compared two successive 3-month periods using similar enrollment strategies: (Apr. 1st to Sept. 30th, 2005)

- **Before** – By members of the Ottawa Health Research Institute
- **After** – By a paramedic research assistant with direct access to paramedics
Enrollment Strategies

Before Phase – By independent researcher

- Recurrent training and information sessions
- Promotional posters in participating base hospitals and emergency departments
- Study forms available with equipment, and at receiving base hospitals
- Laminated pocket cards attached to immobilizing material
Enrollment Strategies

Before Phase – Continued…

- Distribution of monthly newsletters via electronic mail, paramedic’s website, and hard copy
- Monthly draw for an educational incentive
- Brainstorming session with paramedics
After Phase – Paramedic research assistant

• Daily motivation about the study at morning briefing

• Ensured that promotional material and study forms were in view and available

• Distribution of monthly newsletters in ambulances

• Weekly draw for an educational incentive

• Acted as a resource person for peer paramedics who had questions about the study
Methods

• **Outcome Measures:**
  - Patient characteristics
  - Paramedic comfort using the rule
  - Enrollment rates in the CCR Prehospital Validation Study

• **Analysis**
  - Descriptive statistics
  - $\chi^2$ (Chi-Square)
  - Absolute risk statistics with 95% CI
## Characteristics for the 297 Enrolled Trauma Victims

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Before Phase (N=49)</th>
<th>After Phase (N=248)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (years)</td>
<td>38</td>
<td>43</td>
</tr>
<tr>
<td>Male</td>
<td>53%</td>
<td>52%</td>
</tr>
<tr>
<td>Mechanism of injury</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor vehicle collision</td>
<td>53%</td>
<td>53%</td>
</tr>
<tr>
<td>Fall from ≥ 3 feet</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>Motorcycle collision</td>
<td>13%</td>
<td>5%</td>
</tr>
<tr>
<td>Bicycle collision</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Pedestrian struck</td>
<td>6%</td>
<td>5%</td>
</tr>
</tbody>
</table>
# Characteristics for the 297 Enrolled Trauma Victims

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<th>Characteristics</th>
<th>Before Phase (N=49)</th>
<th>After Phase (N=248)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td>ALS medic at the scene</td>
<td>94%</td>
<td>78%</td>
</tr>
<tr>
<td>Very comfortable with CCR</td>
<td>81%</td>
<td>74%</td>
</tr>
<tr>
<td># of cervical spine injuries</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Injuries missed by CCR</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>
Percentage of Eligible Trauma Victims Enrolled per Month Over a One Year Period (N=1,236)

Enrollment (%)

Start of Intervention

Month

Enrolment Rates
Before and After the Study Intervention

AR 46.7%  p< 0.0001

Enrollment (95% CI)

Before Phase (N=49)  18.1%
After Phase (N=248)  64.8%
We have repeated the experience with similar success in Windsor since the publication of these results.

Monthly educational incentives remained unchanged in Windsor, hence could not have explained the improvement in enrolment rate.
Enrollment in the *CCR Prehospital Validation Study* significantly increased after we hired a peer-paramedic research assistant.

EMS researchers should consider doing the same when designing prehospital research protocols.