Barriers to Dispatcher Assisted CPR (DA-CPR) in Singapore

Factors preventing the start of telephone CPR

Ms. Zariel Sim
Why Dispatcher-Assisted CPR?

- Bystander CPR: x2
- RAPID CPR administration

LOW OCHA survival rate: 20% Bystander CPR
United States, 2003
- 64% Mistook agonal breathing
- 37% Physical limitations

London Ambulance Service, 2004
- 49% Barriers present

King country, 2002
- 57% Unnecessary questions
- 29% Not with patient
Characterize barriers delaying or preventing successful DA-CPR in Singapore
1157 Dispatch recordings

- Complete
- No Bystander-CPR in progress
1. Recognise need for CPR

2. Begin CPR instructions

3. First chest compressions
Dispatcher did not recognize need for CPR
29 (2.5%) with 2 unknowns (b)*

Dispatcher recognized need for CPR
1128 (97.5%)

CPR instructions not given
72 (6.2%)

Callers refused to do CPR before instructions given
24 (2.1%)

Callers claimed to know CPR and declined instruction
7 (0.6%)

Others (c)*
41 (3.5%)

CPR instructions given
1056 (91.3%)

Chest compressions not performed by caller
49 (4.2%)

Chest compressions performed to instruction
1007 (87.0%)

*Breakdown of ‘Unknowns’ are shown in Table 1
<table>
<thead>
<tr>
<th>Barriers to DACPR</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couldn’t move patient</td>
<td>118 (27)</td>
</tr>
<tr>
<td>Caller refused</td>
<td>64 (15)</td>
</tr>
<tr>
<td>Hang up phone</td>
<td>47 (11)</td>
</tr>
<tr>
<td>Patient’s status changed</td>
<td>31 (7)</td>
</tr>
<tr>
<td>Caller left phone</td>
<td>30 (7)</td>
</tr>
<tr>
<td>Overly distraught</td>
<td>23 (5)</td>
</tr>
<tr>
<td>Call not with patient</td>
<td>20 (5)</td>
</tr>
<tr>
<td>Difficult access to patient</td>
<td>16 (4)</td>
</tr>
<tr>
<td>Language barrier</td>
<td>15 (3)</td>
</tr>
<tr>
<td>Others: Quality of instructions, Technical difficulties, Help arrived</td>
<td>117 (27)</td>
</tr>
</tbody>
</table>
Chaos (4%)

Environmental factors (13%)
- Changes in conditions (12%)
- Emotional Distress (7%)

Physical limitations (31%)
- Couldn’t move patient (27%)
- Help arrived (4%)
- Patient’s status changed (7%)
- Caller claims patient still breathing/still awake (1%)
- Overly distraught (5%)
- Panicky & anxious (1%)
- Caller’s mindset: Refusal (15%) & reluctance
- Difficulty in assessing patient’s status (2%)
- Language barrier (3%)

Knowledge and skills gap (28%)
- Unable to understand instructions (1%)
- Technical difficulties (4%)
- Caller not with patient (5%)
- Physical inabilities (<1%)
- Physical access to patient (4%)
- Quality of instructions & questions (5%)
- Emotional Distress (7%)
- Overly distraught (5%)
- Panic-stricken & anxious (1%)
- Help arrived (4%)
- Patient’s status changed (7%)
- Caller claims patient still breathing/still awake (1%)

Technical difficulties (4%)

Caller not with patient (5%)

Difficult access to patient (4%)

Caller’s mindset: Refusal (15%) & reluctance

Difficulty in assessing patient’s status (2%)

Language barrier (3%)

Unable to understand instructions (1%)
<table>
<thead>
<tr>
<th></th>
<th>Total (N=1157)</th>
<th>No Barriers (n=727)</th>
<th>One or more barriers (n=430)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognized need for CPR? (%)</td>
<td>1128 (97.5)</td>
<td>720 (99.0)</td>
<td>408 (94.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CPR instructions started? (%)</td>
<td>1056 (91.3)</td>
<td>715 (98.3)</td>
<td>341 (79.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Chest compression started? (%)</td>
<td>1007 (87.0)</td>
<td>715 (98.3)</td>
<td>292 (67.9)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Less likely for key stages to occur
### Key stages

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>No Barrier</th>
<th>Barrier</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mdn</td>
<td>IQR</td>
<td>Mdn</td>
<td>IQR</td>
</tr>
<tr>
<td>Time dispatcher recognizes need for CPR, secs (n=1032)</td>
<td>62</td>
<td>45-100</td>
<td>60</td>
<td>43 - 93</td>
</tr>
<tr>
<td>Time dispatcher begins instructions, secs (n=711)</td>
<td>140</td>
<td>102-190</td>
<td>131</td>
<td>100 - 175</td>
</tr>
<tr>
<td>Time to first compression, secs (n=890)</td>
<td>211</td>
<td>164-270</td>
<td>200</td>
<td>160 - 254</td>
</tr>
</tbody>
</table>

**Significantly longer** time taken to reach key stages
97.5% Recognized need for CPR
91.3% CPR instructions given
87% Chest compression performed

Less likely for key stages to occur

Significantly longer time taken to reach key stages

31% encountered physical barriers
THANK YOU!