HeartBeat

Improving Heart Attack Care in Ireland

(Case study 2)

Dr Siobhan Jennings,
Consultant in Public Health Medicine
## Snapshot picture

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HeartBeat Programme

**AIM**
To save lives from Acute Myocardial Infarction (AMI) by implementing and assuring best practice - using the IHI methodology

**OBJECTIVES**
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- increase % patients receiving the 8 evidenced based components of AMI care (unless contraindicated)
- reduce in-hospital mortality

**FOCUS**
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Initiative included:

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### AMI Care: Key Components of Evidenced Based Care

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**HeartBeat Bulletin**

Care on admission (% eligible received)

Oct 06 – Sept 09 (3 years)

**Bar Chart:**
- **Aspirin**
  - All Hosp N=680
  - Lowest: 50.00%
  - Average: 97.50%
  - Highest: 100.00%

- **Beta blocker (BB)**
  - All Hosp N=599
  - Lowest: 80.00%
  - Average: 94.50%
  - Highest: 100.00%

- **Timely reperfusion**
  - All Hosp N=523
  - Lowest: 36.84%
  - Average: 72.85%
  - Highest: 87.50%
HeartBeat Bulletin
Care on discharge (% eligible received)
Oct 06 – Sept 09 (3 years)

![Bar Chart]

- **Aspirin**
  - All Hosp N=571
  - Lowest: 92.3%
  - Average: 98.0%
  - Highest: 100%

- **BB**
  - All Hosp N=553
  - Lowest: 81.8%
  - Average: 97.1%
  - Highest: 100%

- **ACEI/ARB**
  - All Hosp N=521
  - Lowest: 75.0%
  - Average: 94.5%
  - Highest: 100%

- **Smoke cess**
  - All Hosp N=220
  - Lowest: 66.7%
  - Average: 95.8%
  - Highest: 100%

- **LLD**
  - All Hosp N=566
  - Lowest: 90.9%
  - Average: 97.2%
  - Highest: 100%

Legend:
- **Pink** Highest
- **Black** Average (All Hospitals)
- **Green** Lowest
Three monthly trend in % eligible patients receiving timely reperfusion

Timely reperfusion therapy rates and 95% CI - All hospitals

This chart excludes 11 hypertensive patients who were given reperfusion therapy after blood pressure was treated.
HeartBeat  First 5 hospitals performance annually  
(Oct 2006 – Sept 2009)

<table>
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<tr>
<th></th>
<th>Year 1 (n=215)</th>
<th>Year 2 (n=233)</th>
<th>Year 3 (n=187)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Thrombolysed &lt;=30mins</td>
<td>70.9%</td>
<td>78.1%</td>
<td>83.3%</td>
<td>NS</td>
</tr>
<tr>
<td>% getting PPCI &lt;90mins</td>
<td>54.6%</td>
<td>36.0%</td>
<td>65.1%</td>
<td>NS</td>
</tr>
<tr>
<td>% Patients getting timely RT</td>
<td>68.2%</td>
<td>70.4%</td>
<td>77.1%</td>
<td>NS</td>
</tr>
<tr>
<td>Median ‘door to needle’ (IQR)</td>
<td>25</td>
<td>20</td>
<td>19</td>
<td>0.025</td>
</tr>
<tr>
<td>Median ‘door to balloon’ (IQR)</td>
<td>84</td>
<td>102</td>
<td>85</td>
<td>0.224</td>
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RT  Reperfusion therapy
### Annual in-hospital mortality (STEMI) for the first 3 years of Heartbeat

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<th>Year</th>
<th>Deaths</th>
<th>Death rate (95% Conf Intervals)</th>
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<tr>
<td>Year 1 (Oct 06-Sept 07)</td>
<td>24 (193 patients)</td>
<td><strong>12.44%</strong> (10.9 - 14)</td>
</tr>
<tr>
<td>Year 2 (Oct 07-Sept 08)</td>
<td>15 (205 patients)</td>
<td><strong>7.32%</strong> (6.4 - 8.2)</td>
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<tr>
<td>Year 3 (Oct 08-Sept 09)</td>
<td>12 (223 patients)</td>
<td><strong>5.38%</strong> (4.7 – 6.05)</td>
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What changed within Hospitals?

- **Speedier communication**
  - between ED and Medical/cardiology SpR
  - between Cath Lab and ED

- **Promoted action**
  - Consultant in ED studied data and discussed with colleagues
  - Audit showed contributing factors in each step of the care pathway in 1 hosp
  - Inclusion of HeartBeat in regular meetings

- **Education of SpRs and protocols adjusted**

- **Otherwise** Synchronising ED clocks!
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<td>Throm 83% PPCI 84%</td>
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• AMI death rates are dropping but **Ireland could do better** - evidence is that improved process of care could save *even* more lives

• We have initiated a **quality improvement programme**
  – We are clear on care carried out to high degree in these hospitals
  – Timely reperfusion has improved since inception of Heartbeat
  – In-hospital mortality has improved

• **Issues now** involve
  – **expansion of programme** to all hospitals (and to NSTEMI)
  – addressing primary PCI, pre-hospital triage and thrombolysis
  – Addressing patient delay in seeking help
Questions/comments/observations

- Challenge of set-up, buy-in
- Hosp.variation – in interest, commitment
- Sustainability and growth factors??
  - Corporate
  - At hospital level
  - ACS programme
  - IT environment
  - Spreading change management experience
HeartBeat

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Age standardised CHD mortality rates per 100,000 for Males and Females in Ireland and EU-15
(Source WHO HFA database)
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