Queensland

- Population 5 million
- 37% of residents regional or remote
- High population rates of OHCA in remote and regional areas
- 1.8 million km²

- Unique challenges for service delivery
Profile of OHCA cases in Queensland

- **69,338 Out of Hospital Cardiac Arrests in Queensland between 2000 and 2016**
- **Rate:** 102.4 per 100,000 population in 2016
- **Median age:** 65 years
- **67% male**
- **77% of resuscitation attempts received bystander CPR in 2016**

**Age (Years) vs. Percentage**

- **<16**: 2% Male, 4% Female
- **16-30**: 8% Male, 6% Female
- **31-40**: 8% Male, 6% Female
- **41-50**: 11% Male, 8% Female
- **51-60**: 16% Male, 12% Female
- **61-70**: 19% Male, 15% Female
- **71-80**: 20% Male, 21% Female
- **81-90**: 14% Male, 6% Female
- **>90**: 2% Male, 6% Female

**Gender Breakdown**

- **Male**
- **Female**
Chain of survival

• Response time: 8-8.5 mins (median)
• Early defibrillation: 9-12 mins (median) from ‘000’ to defibrillation
• Early advanced life support: 78% of OHCA with resus attempts had CCP / medical officer in attendance

<table>
<thead>
<tr>
<th>RESPONSE TIMES</th>
<th>Metro</th>
<th>Regional</th>
<th>Remote</th>
<th>State wide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median (minutes)</td>
<td>8</td>
<td>8.5</td>
<td>8.5</td>
<td>8</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>10.9</td>
<td>18.8</td>
<td>24.9</td>
<td>15.1</td>
</tr>
<tr>
<td>90th percentile</td>
<td>15</td>
<td>24</td>
<td>41.9</td>
<td>18</td>
</tr>
<tr>
<td>%&lt;10 minutes</td>
<td>64.4%</td>
<td>57.8%</td>
<td>60%</td>
<td>61.3%</td>
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</tbody>
</table>
Incidence of OHCA: Metro, Regional & Remote

Events per 100,000 population

N=66,340 Crude incidence rate of all OHCA in Queensland – Metropolitan, regional, remote, 2000-2016
Aetiology

Cardiac
Trauma
Hanging
Overdose / poisoning
Cancer / terminal illness
Respiratory disease
Probable SIDS
Drowning
Other

AETIOLOGY

Paediatric
Adult
Location of OHCA

- **Home Residence**: 77%
- **Public Place**: 11%
- **Aged Care Facility / Support Accommodation**: 5%
- **Street / Road**: 4%
- **Other**: 3%

**Age Distribution**
- **67 years**: 77%
- **81 years**: 11%
- **52 years**: 5%

**OHCA Location**
- **Private Residence**: 67 years
- **Nursing Home / Supported Accommodation**: 52 years
- **Public Place**: 81 years
- **Street / Road**:
- **Other**:

**Witnessed Status**
- **Paramedic Witnessed**
- **Bystander Witnessed**
- **Not Witnessed**
- **Unknown**
Bystander CPR

% Of Cases That Receive Bystander CPR 2000-2016 (N= 68,970)

- Unwitnessed
- Bystander Witnessed
- Bystander Witnessed, Resuscitation Attempt
- All OHCA
- Resusitation Attempts Only
Initial rhythm and defibrillation

**Presenting rhythm**
- Shockable: 27% in 2000, 73% in 2016
- Not Shockable: 61% in 2000, 39% in 2016

**Time to defibrillation**
- Median time: 10 minutes in 2000, 12 minutes in 2016
- Q1: 8 minutes in 2000, 10 minutes in 2016
- Q3: 14 minutes in 2000, 16 minutes in 2016
ROSC: by presenting rhythm

Survival outcome of OHCA that receive a resuscitation attempt 2000-2016 – Witnessed status (N=31,356)
Survival to discharge

Survival Outcome Of OHCA That Received A Resuscitation Attempt Of Presumed Cardiac Aetiology 2000-2016 (N=21,278)

Survived To Discharge  
ROSC At Hospital (%)  
Resusitation Attempts Cardiac Aetiology (%)

2000  
2001  
2002  
2003  
2004  
2005  
2006  
2007  
2008  
2009  
2010  
2011  
2012  
2013  
2014  
2015  
2016  

9%  
18%  
40%  
34%  
16%  
27%  
0%  
10%  
20%  
30%  
40%  
50%  
60%
Utstein ‘Survived Event Rate’

2016 OCHA
n = 5,101

Attempted Resuscitation
N = 2,102 (41.2%)

- Bystander Witnessed
  n = 839 (39.9%)
    - VF/VT n = 310 (36.9%)
      - Survived Event
        n = 161 (51.9%)
        - Discharged Alive
          n = 97 (31.3%)
          *Bystander CPR*
          n = 266 (85.8%)
    - Non-VF/VT (Includes Unknown)
      n = 529 (63.1%)
      - Survived Event
        n = 139 (26.3%)
        - Discharged Alive
          n = 20 (3.8%)
          *Bystander CPR*
          n = 383 (72.4%)

- EMS Witnessed
  n = 385 (18.3%)

- Not Witnessed (Includes Unknown)
  n = 878 (41.8%)
Limitations with ‘SER’ measure

- Focus on patients most likely to ‘survive’
  - VF/VT, Bystander witnessed = 310 / 2,102
  - 14% of all OHCA cases where resuscitation attempted

- Growing proportion of OHCA present in non-shockable rhythm
  - 61% in 2000; 73% in 2016

- Most likely to benefit from high quality bystander CPR
1. ROSC has almost doubled

Where the cardiac arrest is witnessed, bystander CPR attempted, and resuscitation by QAS paramedics performed, ROSC at hospital has increased from 20% in 2000, to 37% in 2016.
2. Improvements for patients in shockable rhythms

Patients with an initial shockable cardiac rhythm have seen great improvement in prehospital outcomes, with ROSC at hospital more than doubling from 26% in 2000, to 53% in 2016.
3. Survival to discharge substantially increased

In Queensland, survival to hospital discharge has increased from 9% in 2000, to 16% in 2016.
Strategies to improve survival beyond 2018

• QAS Prehospital reperfusion strategy
  • 2016: 460 referrals to pPCI; 93 prehospital fibrinolysis administrations

• QCOR collaboration

• Aus-ROC collaboration

• Harnessing community capacity to focus on CPR awareness
  • 2016: QAS trained 29,692 community members in CPR skills
  • Acknowledges the majority of OHCA occur in private residences
Coorey & Districts Local Ambulance Committee, Queensland Ambulance Service and Sunshine Coast Health Institute are offering free CPR classes on the first Saturday of each month commencing 4th August 2018 with classes commencing 0830, 1030 and 1230.

Majority of cardiac arrests occur at home and the most likely witness is a family member or friend. Knowing what to do can save the life of your loved one. If you would like the skills, knowledge and confidence to perform CPR, please contact Suzette Dakin.

Telephone: 0428 198 191
Suzette.Dakin@ambulance-qld.gov.au