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## Victoria, Australia – Data Collection

# Using OHCA Registry data to inform and monitor operational initiatives and government funding decisions

## BRIEF SUMMARY

The Victorian Ambulance Cardiac Arrest Registry (VACAR), Victoria, Australia clinical quality registry collects data for all out-of-hospital cardiac arrests (OHCA) attended by emergency medical services (EMS) in Victoria, Australia. Victoria has a population of more than 6 million people, over 4 million of whom reside in the capital city of Melbourne. VACAR commenced in 1999 in alignment with the Utstein template and to date, over 90,000 patient cardiac arrests have been recorded. The registry is used to measure/monitor OHCA outcomes, drive clinical improvement within the state-wide ambulance service (Ambulance Victoria), and also supports a comprehensive research program.

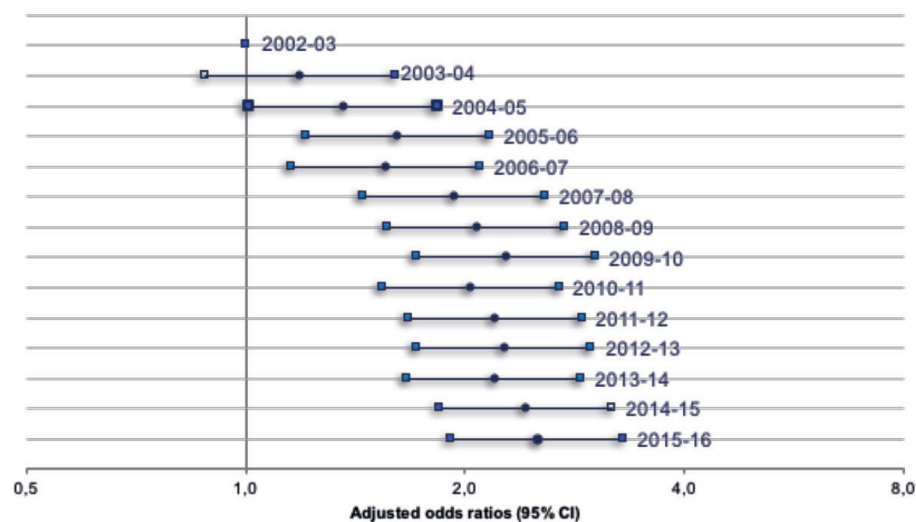
## PROBLEM TO BE SOLVED/BACKGROUND

Finite government and Ambulance Victoria (AV) funding has meant that decisions regarding pre-hospital basic life support initiatives would be ideally based on modelling of the potential impacts. This allows for return on investment to be quantified and informs government and organisational priorities. In addition, initiatives should be monitored and measured to ascertain their impact on survival from OHCA post implementation.

## DESCRIPTION OF PROJECT/PROGRAM

Data from VACAR has been used extensively to inform government investment and organisational initiatives. This includes:

- Government allocation of funding for CPR programs, fire fighter first responders, community response teams and public access defibrillation programs has been informed by VACAR modelling to demonstrate likely survival benefits from initiatives



- VACAR data has been used to prioritise locations for the roll-out of fire first responders and PAD sites, including the density of cardiac arrests and the modelled response time saving
- VACAR data has been used to monitor the impact of initiatives such as moving to a rural CAD system, implementing fire first responders, rolling out a CPR awareness program and implementing a PAD program in key locations (1).
- VACAR data has also been used to monitor changes in treatment protocols (2,3) and in the impact of changing dispatcher instructions (4) and to measure the impact of a public awareness campaign for heart attack symptoms on the incidence of cardiac arrest (5)
- VACAR has also been used to support a large research program, including reducing the cost of clinical trials

### RESULTS

The use of VACAR data to inform and monitor operational initiatives and government funding decisions has been pivotal in improving survival from OHCA in Victoria. The latest VACAR Annual Report (publically available) shows that the risk adjusted odds of survival to hospital discharge for patients presenting in a shockable rhythm has tripled in 2015/16 compared to 2002/03 (AOR 3.3, 95% CI 2.4- 4.5) (6).

### CHALLENGES

Maintaining registry quality data requires significant organisational support and resourcing. Demonstrating value can significantly assist in preserving government and board buy in. This is also facilitated by the incorporation of key cardiac arrest KPIs in the ambulance service's annual agreement with the Health Minister.

### ADDITIONAL PLANS

AV will continue to extensively use VACAR data to make evidence based decisions and to monitor the impact of initiatives. Future plans include informing the roll-out and benefit of dispatching lay responders via the Goodsam application, informing paramedic reaccreditation and training through monitoring of exposure to OHCA (7), targeting areas of high OHCA incidence with low bystander participation (8) and to reduce disparity in OHCA outcomes across regions through risk adjusted identification of outliers.



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