

# First Responder



APRIL '08 Newsletter

## IN THIS ISSUE:

- \* Cairns Cruise company leads way with New Rescue Airways
- \* Minimally Interrupted Cardiac Resuscitation Improves Survival after Cardiac Arrest
- \* ARC hesitates on CPR recommendations
- \* Paramedics falling asleep at the wheel
- \* American airlines save 8 cardiac arrest victims per year
- \* The Last Word

## EMERGENCY MEDICAL TECHNICIAN PROGRAM CERTIFICATE LEVEL IV CAIRNS

June 16 - 27 2008  
11 days full-time

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## REFRESHER PROGRAM CAIRNS

July 16-18 2008  
3 days full-time

## Cairns cruise company leads the way with new Rescue Airways

This month saw the Cairns based cruise company Big Cat Green Island Cruises introduce 2 new revolutionary devices into their "medical response" kits.

Big Cat Cruises offers daily trips to Green Island which lies on the Barrier Reef. Approximately 250 people a day join the trip and range in age from children right through to the elderly.

Big Cat's policy is to have all crew trained in First Aid, Defibrillation and Advanced Resuscitation. This amounts to approximately 25 people who attend quarterly training sessions to have their skills reassessed, ensuring preparedness in the case of a medical emergency.

The two new medical devices now included in their emergency equipment inventory are the "ResQPOD" - a device that enhances blood flow during CPR and the new I-Gel airway (see previous newsletter) - a device that secures a patient's airway during CPR and takes approximately 6 seconds to position.

Both the I-gel and the ResQPOD have only been available in Australia since 2007 but are gaining acceptance rapidly as more people are becoming aware of the need to enhance CPR with mechanical devices instead of relying on standard techniques which are inherently inefficient.

In general terms, standard CPR only supplies up to 20% of normal blood flow to the heart resulting in poor outcomes. Both animal and clinical studies have shown that by utilising such devices as described above, over 50% of normal blood flow is achievable during CPR.

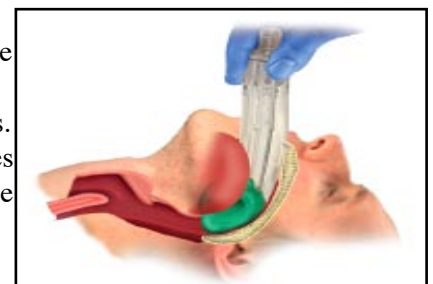
Big Cat's crew were quite surprised at the ease and speed in which the i-gel airway could be used and quickly accepted the new techniques. The management of Big Cat Green Island Cruises supported the new style of "tailored CPR" for the workplace and agreed that by applying the standard techniques taught for the lay person, that the possibility of successful outcome would be poor given that whilst at sea or on a remote island, there was no immediate back-up from the Emergency Services



One of Big Cat's Barrier Reef vessels



Inserting the I-gel airway which can be completed in less than 6 seconds



Inserting the I-gel airway

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## OXY / AED Kit



**\$ 4,999.00** (GST Incl)

### KIT INCLUDES:

- \* Oxy Resus Soft Pack
- \* **ZOLL AED PLUS**
- \* **ResQPOD**
- \* All brass multiflow regulator
- \* Bag Valve Mask Device - disposable  
- Adult & Child sizes
- \* LMAs (3 sizes) disposable plus accessories
- \* Therapy Masks (adult & child)
- \* Oropharyngeal Airways - Set of 3
- \* V-Vac Suction Kit with spare cartridge
- \* Stifneck Select Cervical Collar
- \* Instructions for Use

*Postage, Handling & Cylinder not included*

## INTRASOSEOUS VASCULAR ACCESS PROGRAM

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As well as training with the new devices, the crew have also now adopted new guidelines for initiating and continuing CPR. These guidelines include:

- \* Initial assessment of the collapsed casualty
  - presence or absence to responses to stimuli, airway patency & checking colour of the mucosa
  - presence or absence of breathing and/or agonal gasps
- \* Commencement of immediate compression only CPR whilst other crew retrieve equipment.
- \* Addition of rescue breaths via a pocket mask only by a second operator to minimise interruptions to compressions.
- \* Placement of Defibrillation pads and securing of the airway with the I-gel
- \* Applying the ResQPOD to either the pocket mask or I-gel airway ASAP to enhance circulation
- \* Applying supplemental oxygen via a bag valve mask
- \* Continuing high quality CPR for 2-3 minutes before allowing the Defibrillator to analyse the patient's heart rhythm and deliver shocks as required.

## "Minimally Interrupted Cardiac Resuscitation" improves cardiac survival rates

**A** new approach to out-of-hospital cardiac resuscitation, intended to maintain nearly constant chest compressions and reduce positive pressure ventilations, triples the rate of survival to hospital discharge, according to prospective study findings reported in the Journal of the American Medical Association (JAMA) for March 12.

This new approach of "minimally interrupted cardiac resuscitation" (MICR) procedure for prehospital personnel includes an initial 200 uninterrupted chest compressions at 100 compressions per minute, rhythm analysis with a single defibrillating shock when indicated, immediately followed by 200 postshock chest compressions before any pulse check or rhythm reanalysis". No ventilations take place during the initial stages of the procedure. Adrenalin is administered as soon as possible and again with each cycle of chest compression and rhythm analysis and securing of the airway is delayed until after three cycles.

The procedure was evaluated in a study comparing survival before and after MICR training of fire department emergency medical personnel in two Arizona cities. A second analysis, which followed training of 12 additional fire departments and involved 62 fire departments throughout Arizona, compared outcomes among patients who received MICR with those who received standard advanced life support.

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- \* All brass multiflow regulator
- \* ResQPOD
- \* Bag Valve Mask Device  
- Adult disposable  
including mask, tubing and reservoir
- \* Therapy masks (adult)
- \* Set of 4 Oropharyngeal Airways
- \* V-Vac Suction Kit
- \* Glucometer (Accu-chek)
- \* Sphygmomanometer (palm style)
- \* Stethoscope (Sprague)
- \* Penlight torch
- \* Paramedic shears
- \* Sharps container
- \* Stifneck Select Cervical Collar
- \* Instructions for Use

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These significant increases in CBF were highly correlated with the decreases. The first analysis included 218 cardiac arrests before MICR training and 668 after MICR training. Corresponding rates of survival to hospital discharge were 1.8% and 5.4%

In the subgroup of 174 patients with a witnessed cardiac arrest and a shockable rhythm, survival increased from 4.7% prior to training to 17.6% afterward

In the second analysis, 1799 subjects did not receive MICR and 661 did. Survival to hospital discharge was 3.8% and 9.1%, respectively. Survival rates among 528 patients with witnessed cardiac arrest was 11.9% (46 of 337) and 28.4% (40 of 141), respectively.

The rationale for this procedure is based on the fact that during cardiac arrest, myocardial oxygen delivery is limited more by blood flow than oxygen content of the blood. Noting that survival to hospital admission did not differ with resuscitation technique, the study team suggest that "MICR provides perfusion sufficient for longer term survival."

In a related editorial in the JAMA by Drs. Mary Ann Peberdy and Joseph P. Ornato, at Virginia Commonwealth University in Richmond, write, "this study represents confirmation that the quality of CPR, particularly the need for minimally interrupted chest compression and the lesser importance of positive pressure ventilation, is a meaningful development in the evolution of resuscitation science."

## Australian Resuscitation Council not convinced CPR guidelines should change

**T**he resistance to remove EAR (rescue breaths) from CPR for lay rescuers is limiting the amount of people that potentially could be saved.

A recent article in the Sunday Mail reports that the Australasian College of Emergency Medicine (ACEM) suggests that mouth to mouth ventilation be abolished from national Cardiopulmonary Resuscitation (CPR) guidelines and replaced with chest compressions only. "The evidence is becoming quite convincing and makes one think that it should become the standard" says ACEM's Dr Stephen Barnard.

ACEM bases its stance on the results of two prestigious studies that found patients were more likely to survive without brain damage if compression CPR was applied. The amount of valuable compression time delayed by interruptions for ventilations means less vital blood flow to the heart and brain. This is especially evidenced by the time required for a single rescuer to accomplish the "standard" 2 breaths between sets of compressions. This can take anywhere between 10-20 seconds to achieve. Studies show that interruptions to compressions as little as 5-10 seconds can result in a total loss of forward blood movement during CPR.

The Australian Resuscitation Council, the peak body that oversees changes to international guidelines is resisting the change. Associate Prof. Ian Jacobs, chairman of the ARC appears not to be convinced by the research.

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The ARC concedes that interruptions during CPR is quite undesirable but feel that a point hasn't been reached where a change is required, the article said.

The study from *JAMA* discussed in the previous section suggest that a 3 fold increase in survivability with compression only CPR should occur and from the UK journal *The Lancet* found that patients were more likely to recover without brain damage if first aiders concentrated on compressions rather than breaths.

See editors note - "The Last Word" - when do we really need to do breaths"?????

## Australian Union: Paramedics falling asleep at the wheel

A recent article from ABC Premium News (Australia) reports that the Victorian Ambulance Employees Association says a survey of Victorian paramedics has found dangerous levels of fatigue and have caused some to fall asleep at the wheel or make mistakes drawing up drugs.

The Association says 20 per cent of the paramedics across the state responded to the online survey.

One in ten said fatigue affected their judgement at least once a week on the job. The Association's State secretary, Steve McGhie, says the data will be used to back up a submission already received by the government, for more paramedics and reduced workloads.

"We've suggested that we need 100 paramedics in rural Victoria and an extra 250 in metropolitan Melbourne. "That's to deal with the massive increase in caseloads, the fatigue levels, the excessive overtime and improved service. That's what we believe is required to fix some of these issues."

He says the caseload in Melbourne has gone up by over 18 per cent and the resource levels have only gone up by 3.6 per cent in rural Victoria.

## American Airlines save up to 8 cardiac arrest victims per year

This year marks the beginning of the second decade that American Airlines have been carrying defibrillators on board its flights.

In 1997, American Airlines became the first U.S. carrier to equip its aircraft fleet with Automatic External Defibrillators (AEDs), and in the following decade American Airlines had saved 76 lives. American Airlines uses an extensive training process to ensure that all of its approximately 18,000 flight attendants are AED/CPR trained annually.



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The American Heart Association estimates that 95 percent of sudden cardiac arrest (SCA) victims die before reaching the hospital, and when defibrillation is provided within 5 to 7 minutes, the survival rate from SCA is as high as 49 percent. However, since equipping its aircraft with AEDs, American Airlines has achieved a survival rate of 63 percent. The rate of survival aboard American Airlines is so high because an AED is only a few footsteps away from a victim of SCA, whereas in public, AEDs are not often readily available. The sooner normal heart rhythms can be restored, the more likely an SCA victim is to survive. Who would have thought that an airplane would be one of the best places to have a heart attack? While SCA is not limited to senior citizens, the aging baby boomer generation, characterized by a longer and more active life, makes this onboard health resource all the more relevant.

## The Last Word

Should we still teach EAR (rescue breathing/mouth to mouth) ??????????

Absolutely !!!! But as discussed recently, resuscitation needs to be tailored to the environment or workplace. Examples where rescue breathing may be required are with immersion, drug overdose and electrocution victims. Although rare, in these instances performing ventilations can be lifesaving. I'd hate to imagine an unconscious victim who is inadequately breathing being left unattended to the point where they finally stop breathing before CPR is commenced. This scenario could easily occur with immersion victims and to think lifeguards or lifesavers have only ever been taught to perform CPR and not EAR on its own is of concern.

Ventilations should be given:

1. When an unconscious victim still has circulation but is inadequately breathing or not breathing
2. During 2 operator CPR if the person giving ventilations has a resuscitation mask and is trained to use it. (1 operator CPR will result in unacceptable interruptions)
3. When an Impedance Threshold Device (ResQPOD) is being used during 2 operator CPR (the ResQPOD improves blood flow during chest compressions by enhancing the vacuum in the thoracic cavity - ventilations are required to prevent unnecessary collapsing of alveoli).
4. When the patient's airway is secured with a "rescue airway device such as an I-gel or Laryngeal Mask Airway (this is now a First Responder skill and will be more prominent in workplaces)

*One person CPR should be taught with the compression only technique* - this should be recommended for the public lay rescuer whilst waiting for the next tier of emergency care to arrive. Ventilations should then be taught as required for the environment and workplace situation.

### ONE SHOE DOES NOT FIT ALL !!!!!

Without doubt compression only CPR will be introduced sooner than we think and I suspect its weeks away !!!!!

*Charles Makray  
Managing Director*

## ResQPOD®

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CAIRNS**  
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Half day full-time plus  
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