First Responder

First Response AUSTRALIA

June '12 Newsletter

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Medics & police join forces in "booze" response units in UK

Paramedics and police in Bradford, England have joined forces to provide rapid response for alcohol-fuelled revelers and victims of drunken violence, in the first pilot scheme of its kind in Bradford. An officer in Bradford City Ward Neighborhood policing team and a paramedic from Yorkshire Ambulance Service (YAS) NHS Trust have started patrols in the city centre late on Fridays and Saturdays which traditionally see a rise in the number of emergency 999 calls. They provide a "quick response" with the paramedic helping those who have drunk too much or attacked while out drinking, while police will deal with any aggressive behavior or trouble-causers.

The move means people can be treated at the scene, rather than taken to hospital, easing "pressures placed on the police and ambulance service by alcohol-related incidents", a police spokesman said. Bradford City Ward NPT Inspector Kevin Pickles said: "By working together, we can quickly resolve incidents there and then which require the assistance of the police. "This might be having to wait with those who are ill or injured until the paramedics arrive. Likewise, paramedics could require police assistance to deal with someone who is drunk and aggressive, which can also take additional time. "While we are dealing with any instances of anti-social behavior, crime or disorder, the paramedic provide early medical assessment and treatment to those who are injured. "Through this joint approach, we can have an instant impact and be quickly ready to respond to further calls."

Cardiac cocktail delivered by medics may save lives

Chicago, USA paramedics armed with a cheap, three-ingredient injection cocktail were able to reduce heart attack patients' risk of dying by 50 percent, said a US study released on Tuesday. When the injection was given early to patients with signs of a heart attack, the mixture of glucose, insulin and potassium showed remarkable success in preventing full cardiac arrest — when the heart stops beating — and even death. And each shot cocktail costs only about $50, according to the research presented at the American College of Cardiology's 61st annual scientific meeting in Chicago. "When started immediately in the home or on the way to the hospital — even before the diagnosis is completely established — GIK appears to reduce the size of heart attacks and to reduce by half the risk of having a cardiac arrest or dying," said co-principal investigator Harry Selker. "Because the trial is the first to show GIK is effective when used by paramedics in real-world community settings, it could have important implications for the treatment of heart attacks," added Selker, executive director of the Institute for Clinical Research at Tufts Medical Center.

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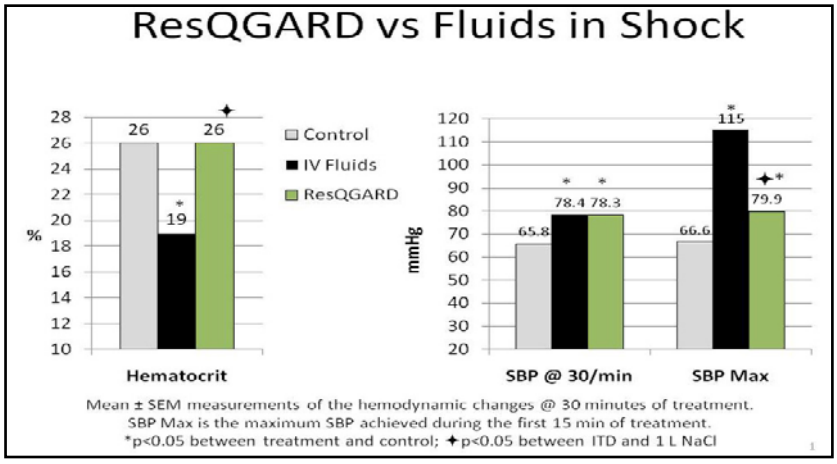
Previous trials using the formula were inconclusive, possibly because the shot was being given to patients too late, he said. But this trial, which randomized 911 patients to receive either the shot or a placebo and was carried out by trained paramedics in 13 cities across the United States, showed positive effects in those who were given the treatment. The treatment did not prevent heart attacks from occurring, but cut the likelihood of cardiac arrest by 50 percent over patients who did not get the shot. The risk of immediate death also dropped by 50 percent. The effects were visible over the month following the event as well, with patients given the shot 40 percent less likely to die or be hospitalized for heart failure than those who did not. In patients with a certain kind of heart attack in which a coronary artery becomes completely blocked, known as an ST-elevation heart attack, immediate GIK was associated with a 60 percent reduction in cardiac arrest or death. Those who got GIK and were later confirmed to have had a heart attack saw an average of two percent of their heart tissue damaged, compared to 10 percent in the placebo group. While 23 percent of the suspected heart attacks in the study turned out to be false alarms, patients who got the GIK shot showed no negative side effects from the treatment. The key difference in this trial compared to previous ones appeared to be the act of giving the shot right away, rather than waiting for a confirmed diagnosis at the hospital. "We wanted to do something that is effective and can be used anywhere," said Selker. "More people die of heart attacks outside the hospital than inside the hospital. Hundreds of thousands of people per year are dying out in the community; we wanted to direct our attention to those patients."

For now, the treatment is not widely available. Further research is planned to track the study participants over the next year and evaluate its longer-term effects and benefits.

New non-invasive therapy for treating hypotension

An evolving concept in the field of trauma care is the prehospital management of shock due to uncontrolled hemorrhage. Prehospital care has traditionally included early and aggressive fluid administration to raise the blood pressure; however, early aggressive use of IVs has become controversial as recent studies have demonstrated that raising the blood pressure too high increases blood loss (and thus mortality) from a “popping the clot” mechanism associated with this therapy. The other drawback to giving profuse amounts of fluids is that it dilutes the blood of hemoglobin (oxygen transporter) and clotting factors, and takes up circulatory space that caregivers would prefer to use for blood replacement. Thus, the theory of “permissive hypotension” has gained popularity and demonstrated increased long-term survival in both animal and human studies. Permissive hypotension minimizes fluid administration and seeks to raise the blood pressure just enough to keep blood flowing to vital organs but not so high as to disrupt the formation of clots.

A study by researchers in Minneapolis sought to compare the hemodynamic effects of treating haemorrhagic shock non-invasively with an impedance threshold device (ResQGARD ITD) to IV fluids in an animal model of severe blood loss. Twenty-seven spontaneously-breathing pigs were anesthetized and then subjected to a bleed of 55% of their blood volume. The pigs were then randomized to receive: 1) no treatment (control); 2) ResQGARD ITD) 1 liter of IV fluids (saline). They were then evaluated for 30 minutes. The results are shown in the table (right):



In this study, the group of pigs that received the ResQGARD had the same hematocrit percentage as the pigs that received no fluids, so the blood was not further diluted. Also of note, while the blood pressures for the ResQGARD and IV Fluid groups were similar at 30 minutes, IV fluids caused a spike in systolic blood pressure (SBP MAX) that is often associated with the disruption of blood clot formation.

The ResQGARD ITD is used to treat low blood circulation, which results from hypotension. Hypotension has a significantly detrimental impact on morbidity and mortality. One large study found that 19% of patients admitted to the hospital from the emergency department (ED) had a hypotensive episode and that patients with hypotension were 10 times more likely to have sudden and unexpected death. A large national trauma bank study found that for every 10 mmHg decrease in systolic blood pressure (BP), mortality increased 4.8%.

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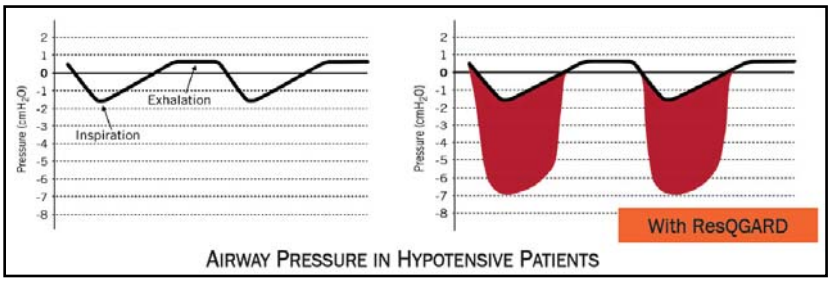
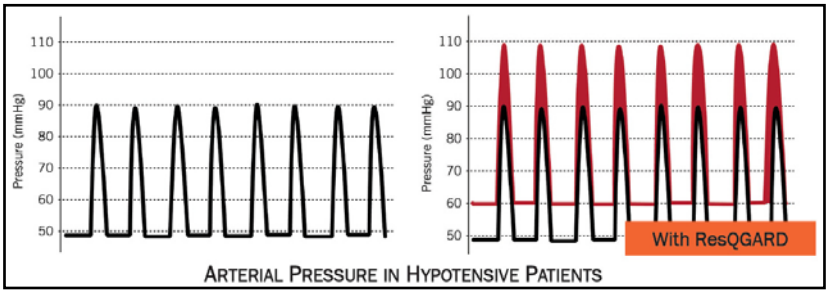


AIRWAY PRESSURE IN HYPOTENSIVE PATIENTS



ARTERIAL PRESSURE IN HYPOTENSIVE PATIENTS

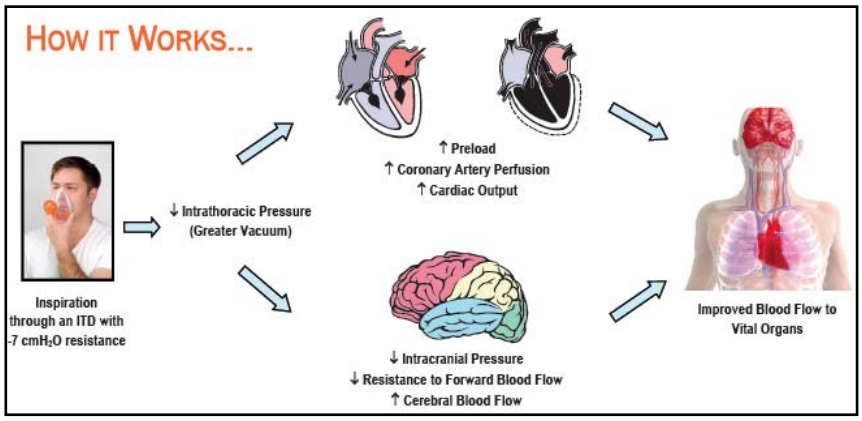
The key to survival for the trauma patient is preventing severe hypotension (e.g. SBP < 40 mmHg, absent palpable pulses) without over-diluting the blood or raising the blood pressure too high. In this animal study of severe blood loss, the group of pigs that received the ResQGARD significantly improved their systolic blood pressure, but not so high as to "pop the clot". Additionally, their blood was not further diluted with excess fluids, a situation that trauma surgeons welcome until the source of the bleeding can be definitively controlled and the preferred fluid treatment for hemorrhagic shock (blood, not IV fluids) may be administered. Thus, the ResQGARD offers caregivers the ideal "bridge therapy" until definitive care can be administered.

The ResQGARD is an impedance threshold device (ITD) that harnesses the body's natural reflexes to enhance circulation. Over 35 published clinical trials, animal studies and review articles, many in collaboration with NASA and/or the US Department of Defense, have shown that the ResQGARD works to rapidly and non-invasively increase blood pressure from a variety of etiologies (e.g. hypovolemia, orthostatic intolerance, heat shock, renal dialysis and blood donation).

In 2008, the ResQGARD received the US Army's SBIR Achievement Award for the technology's application in the non-invasive treatment of hemorrhagic shock.

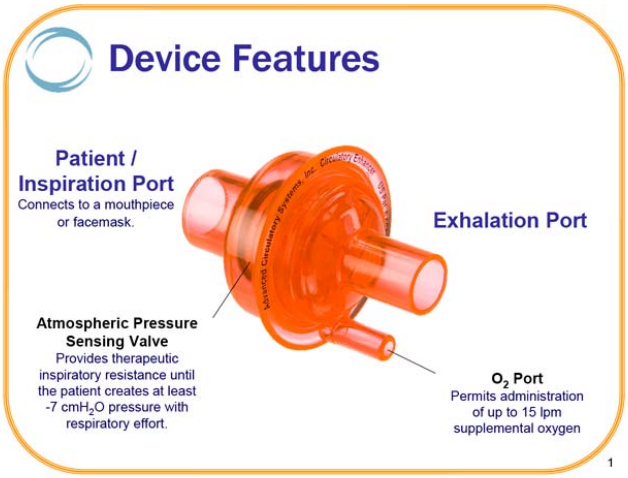
The ResQGARD has been evaluated in 20 human clinical trials including models of normotension orthostatic intolerance and hypotension:

* In an emergency department & emergency medical services setting
* During simulated hemorrhagic shock
* During orthostatic challenge (e.g. supine to standing or tilt-table/squat-stand test)
* During renal dialysis
* Following blood donation



These studies have shown that the ResQGARD:

1. Improves hemodynamics:
   * Increases systolic BP 6 - 29%
   * Increases diastolic BP 4 - 20%
   * Increases mean arterial pressure 5 - 27%
   * Increases stoke volume and cardiac output 10 - 21%
   * Reduces the drops in pressure, cardiac output and/ or stroke volume during orthostatic stress
   * Increases cerebral blood flow 9 - 11%
2. Increases blood pressure in actual / simulated hemorrhagic shock, but not to levels typically associated with "popping clot"
3. Reduces orthostatic symptoms
4. Lowers intrathoracic pressure during inspiration
5. Breathing through therapeutic resistance is well tolerated
6. Does not compromise oxygen saturation



The use of this non-invasive therapy eliminates the pitfalls of excessive fluid resuscitation which include, decreased oxygen and nutrient delivery to tissues, decreased waste product removal from tissues, inhibited or disrupted clot formation resulting in increased bleeding, increased risk of hypothermia

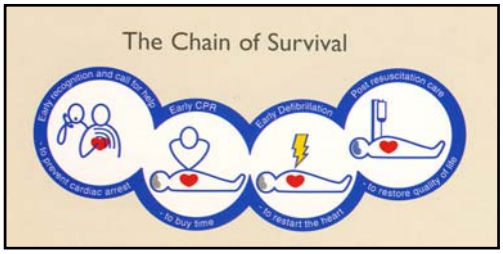
For more information on: ResQGARD visit: www.resqpod.com.au

Black cardiac arrest victims less likely to receive bystander CPR (USA)

A 4-year study in the USA shows bystanders are more likely to perform CPR on white victims. Black cardiac arrest victims who are stricken outside hospitals are less likely to receive bystander CPR and defibrillation on the scene than white patients, according to research that will be presented by a research team from the Perelman School of Medicine at the University of Pennsylvania today at the annual meeting of Society for Academic Emergency Medicine. The researchers also found that black patients' hearts were much less likely to have been restarted by the time they arrived at the hospital — a key indicator for whether cardiac arrest victims ultimately survive. "Cardiac arrest is a time-sensitive illness that requires immediate action to keep blood flowing to the brain — every minute without CPR and the application of shocks from an automated external defibrillator robs patients of a chance to fully recover," said senior author Roger Band, MD, an assistant professor of Emergency Medicine. "Our findings show troubling racial disparities in the use of these lifesaving measures, and they point to the need to do more to ensure that every patient has the best chance of surviving."

The researchers studied 4,909 adult out-of-hospital cardiac arrest (OHCA) cases that occurred between January 2008 and February 2012 in the city of Philadelphia using data from the Philadelphia Fire Department. Analysis revealed that despite resuscitation measures by paramedics and, in some cases, lay bystanders, black patients were less likely to have regained their pulse before arrival at the hospital than white patients (14.7 percent experienced a return of spontaneous circulation, compared to 17.1 percent of white patients). They were also less likely to have received important pre-hospital care measures that are a proven part of the cardiac arrest "chain of survival." Thirty four percent of white patients received a shock from an automated external defibrillator (AED) placed by a bystander or medical first-responder on the scene of their arrest, compared with 27 percent of black patients.

Bystanders performed CPR on 5.6 percent of black patients, compared with 7.5 percent of white patients. The investigators plan to look more closely at the possible role of neighborhood factors and socioeconomic status on their findings, perhaps to develop more targeted CPR training programs and place AEDs more strategically in the community. In a separate study using the same database that will also be presented during the conference, Band's team also found that patients who suffered cardiac arrests at night versus during the day were less likely to have regained their pulse before arrival at the hospital (14.1 percent experienced a return of spontaneous circulation at night, compared to 16.5 percent during the day).



Those who arrested at night (between 8 p.m. and 8 a.m.) were also significantly less likely to receive bystander CPR, and took longer to be transported to the hospital than those who were stricken during the day. Though these differences may be explained partly by location of victims at the time of their arrest (in the home versus in public places), Band says the differences underscore the need to improve public awareness of the importance of CPR and AED use. "It is imperative for the public to know that these two interventions that have the greatest impact on survival, and they can be performed by anyone. If CPR and AEDs were employed for every cardiac arrest, hundreds of thousands of lives would be saved annually, in the U.S. alone," Band says. "Our studies reiterate the fact that use of these basic lifesaving tools is far too low across all patient populations, and even small increases in their use would translate into very significant increases in survival."

The Last Word

In March of this year, NSW schools were forced to decline the offer of free defibrillators because the education department does not support their use at schools. Grieving family and friends raised $50,000 after a 16 year old collapsed after completing an exam at a Sydney college.

Next month we look at the need for schools and sporting clubs to have AEDs on standby. This year has already seen two high profile football players suffering a sudden cardiac arrest on field with only one of those surviving because of - you guessed it - early CPR and defibrillation.

Stay Safe
Charles Makray

Sales @ FRA - End of financial year sale - stock must go !!!!

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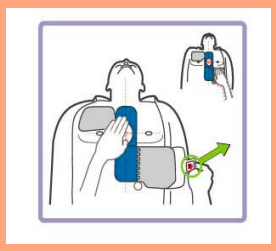

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- Fingertip Pulseoximeter
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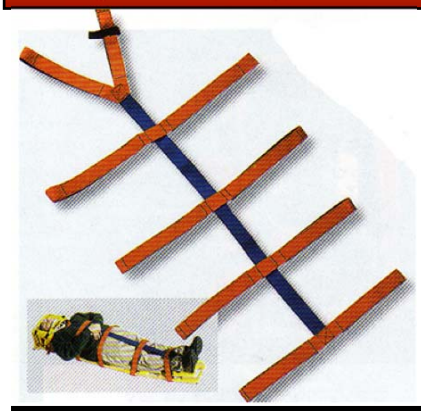
- Penlight torch
- Paramedic shears
- Sharps container
- X-Collar Cervical Splint
- Instructions for Use



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