

## Making LifeVac part of your BLS training - a guide for first aid providers in Australia.

### Background

The LifeVac is a novel self-powered anti-choking device used for the removal of an upper airway obstruction after the failure of other first-aid measures. BLS providers in Australia may not have had any experience with his device and have limited training to first aid measures contained in the Australian Resuscitation Council (ARC) guidelines i.e. back blows and “chest thrusts” (See *Note 1*).



There are sadly, incidents that occur where these current first aid measures fail to relieve an obstruction in time to prevent death or serious brain injury, especially in children. The LifeVac has been developed for just this eventuality i.e. to relieve airway obstruction after the failure of first-aid measures. Choking is a significant cause of death and hospital admission in people under 4 years old and the second most common reason for unexpected death in aged care. There are also many people who suffer with dysphagia (difficulty swallowing) who are at a higher risk of choking. These include people with MS, MD, Stroke, MND and CP. LifeVac was invented in the USA, is listed on the ATGA and is authorised under the NDIS. LifeVac has already saved 11 lives after first-aid attempts

have failed and tests on cadaver and anatomical models has shown it can remove 97% of obstructions on the first pull and 100% of obstructions by the third pull. LifeVac can generate nearly four times the pressure able to be created with the best first aid measure.

### Certification, Approval and Guidelines

BLS guidelines used in Australia are used to assist in describing current method. A guideline by definition is “a general rule, principle, or piece of advice”. In the context of BLS they only have the status of consensus opinion about practice and cannot be considered specific limiting rules, legislation, law or finite directions. Currently in Australia there are two organisations that are primarily involved in the development of guidelines for BLS practice and industry codes.

1. The Australian Resuscitation Council (ARC) – is a private (non-government), voluntary organisation that is a member of the International Liaison Committee on Resuscitation (ILCOR), and produces its own local guidelines based for the most part on ILCOR recommendations. Although a non-government, voluntary organisation most government and industry groups recognise the ARC as the default authority BLS practice. The exception in treatment concurrence is the management of choking where the ARC recommendations differ from ILCOR recommendations i.e. back blows, chest thrusts (not as recommended by the ARC) and abdominal thrusts for patients over 1 year of age.
2. The Industry Skills Council – is a Government controlled group that regulates codes and standards for training in industry. Among these are BLS requirements across industry, drawn substantially from the ARC guidelines and recommendations.

Neither the ARC nor the ISC have a process or methodology for the review and/or approval of any device used in first aid practice. In the future, LifeVac will be seeking the inclusion of “self-powered ant-choking devices” into the International Liaison Committee on Resuscitation (ILCOR) recommendations for the management of choking as world’s best practice after other measures fail.

Note 1: The “*chest thrust*” method recommended by the ARC is not the same method as recommended by ILCOR.

The Therapeutic Goods Administration (TGA) is the Government organisation that regulates pharmaceuticals and medical devices sold in Australia. Medical Devices are classified by risk and must be registered with the TGA and satisfy scaled evidentiary standards and other regulatory requirements including safety, labelling and claims made. The LifeVac device is listed as a Class 1 Medical Device with the TGA as this is the recommended status in other countries and best matches the risk associated with use of the device. The LifeVac has been tested on a cadaver, anatomical models and has already saved 11 lives after first aid measures have failed.

### **Liability in BLS in Australia**

A concern raised by BLS providers with any new technique or equipment is that of liability both of the first-aider and the provider. In relation to the provider, the LifeVac is designed to be used after the failure of first-aid measures to relieve an upper airway obstruction. It does not therefore replace current training requirements as set out by the ISC or ARC. The LifeVac can therefore be included in current strategies without compromising the existing regimes. Codes for industry and guidelines in BLS do not limit content and in fact the ARC acknowledges that “other techniques may be more effective”.

In relation to individual liability, Australia, like many other countries around the world has “Good Samaritan” type laws that protect persons from liability in rendering emergency assistance to another person. These are essential so that those who render assistance (and particularly non-professionals) are not held personally liable for just “trying to help” others in an emergency.

*“A good Samaritan does not incur any personal civil liability in respect of any act or omission done or made by the Good Samaritan in an emergency when assisting a person who is apparently injured or at risk of being injured.”*

A “**Good Samaritan**” is a person who, in good faith and without expectation of payment or other reward, comes to the assistance of a person who is apparently injured or at risk of being injured’. To be a good Samaritan the person has be

- 1) acting in good faith;
- 2) without expectation of payment or other reward;
- 3) to assist a person who is;
- 4) apparently injured or at risk of being injured.

Nothing in that list says anything about ‘acting within one’s qualifications’ and that is for obvious reasons. The Act is intended to encourage people, including those without any qualifications, to help when help is needed. Applying that reasoning to the Good Samaritan provisions requires that the rescuer is acting ‘not maliciously or to achieve an ulterior purpose’ so they’re acting to assist the

injured person, not to steal their wallet or do them harm and it's a genuine attempt not to harm the person, i.e. to do the right thing. So, for example, a person who is confident in the use of oxygen (but has no "certification") and who genuinely believes that oxygen is warranted in the best interest and to avert harm to the patient is acting in good faith when they administer that oxygen; or if they were to use the person's Epi-pen or help them with their Ventolin; or do CPR or use an automatic defibrillator, or use the LifeVac when first aid has failed.

In contrast, the person who says 'I always wanted to do a cricothyroidotomy using a Swiss army knife and a pen (as in *M\*A\*S\*H Season 5 Episode 8, 'Mulcahy's War'*) and now I can because I can't be sued' is not, under the law, acting in good faith. Using a new skill or piece of equipment does not in itself create liability. Teaching first responders to use a new device or technique does not in itself create liability. ARC guidelines are essentially (and by their own admission) the "opinion" of the individuals who make up the ARC committee and not the organisations represented in their membership. The ISC (which bases training codes on the ARC guidelines, provides a framework for the "minimum" training requirements and not the limit of best practice in industry and business.



The LifeVac is designed to be used without specific training and after first aid attempts have failed. We believe that using the LifeVac therefore does not constitute a rescuer "exceeding their training" i.e. constituting negligence or reckless behaviour under law; regardless as to whether specific LifeVac training was included in their first aid training.

The use of LifeVac has already been incorporated into local emergency protocols in the US and Europe, where litigation is far more likely. In incorporating the LifeVac into BLS training it is important to recognise that any technique is not an absolute guarantee of success.

### Example of Choking Procedure incorporating LifeVac

1. Encourage the casualty to cough
2. Diagnose the presence of an effective or ineffective cough and/or deteriorating perfusion
3. Apply up to five back blows between the shoulder blades in a head down posture (checking between each blow for the obstruction)
4. If fails back blows fail apply:
  - Up to five chest thrusts (using two-hands from behind the casualty or abdominal thrusts (if > than 12 months). Use chest thrusts (from behind the casualty) in pregnant or obese casualties). Checking between each thrust for the obstruction.
  - CPR like chest thrusts in infants
  - Use up to five pumps of the LifeVac device, checking after each pump for the obstruction.
    - Select appropriately sized mask
    - Fit the mask tightly to the device
    - Hold the mask tightly against the casualties mask

- Push the handle forcefully toward the casualties face and immediately pull back on the handle
- Examine the mask for the obstruction
- If fails call Ambulance via 000 and repeat procedure.
- Commence CPR if casualty unconscious and not-breathing

### Important Training Points

Although the simple operation of the LifeVac has been designed to be used without formal training, it is expected that when the LifeVac is incorporated into current BLS training some rudimentary training be conducted. Although the use of a resuscitation mask is usually a part of BLS training i.e. the use of a pocket resuscitation mask with one-way valve and viral filter; the correct selection of a mask to match the patient's size and associated fitment is not.

The most important factor in ensuring that the LifeVac is effective and that the obstruction is removed quickly is the accurate selection and use of the face mask i.e.

1. The right size for the patient
2. It is fitted correctly to achieve a proper seal

### Correctly sizing the mask

The LifeVac kits comes with various sized masks to match the most common range of patients i.e. child (x1), small adult (x2) and large adult (x1). [Picture 1]. A extra-large mask is also available. The additional small adult mask is included for practice using the device prior to emergency use. It is important that the mask is fitted to the face with the mouth in the open position when using the LifeVac. To ensure proper sizing the mask should be test fitted to the patient prior to operation of the device. Approximate the mask size visually. Start by sliding the nose (narrow) section of the mask seal around the bridge of the nose [Picture 2] and then rotate the mask against the face, ensuring the lower seal sits between the chin and lower lip [Picture 3] of the patient (with the mouth open). If the mask does not properly match these two landmarks an alternate mask should be selected.

Picture 1 – Range of masks



Picture 2 – Positioning the mask over nose



Picture 3 – fit mask over face with mouth open



Picture 4 – Holding the mask on the person's face during use



### **Correctly fitting the mask**

Once the correctly sized mask has been selected, and it is firmly attached to the LifeVac plunger unit, the mask should be held firmly to the patient's face using one hand (the index finger and thumb around the centre port of the mask and the remaining fingers gripping the patient's lower jaw.

[Picture 4]

### **Demonstrating the LifeVac**

The one-way valve assembly of the LifeVac ensures that any foreign body is not forced further into the airway during operation. This feature is easily demonstrated during training using any hard, smooth surface; sealing the mask with one hand then using the push pull action.

### **Removing an Obstruction**

Demonstrating the removal of an airway obstruction using the LifeVac device, during training, is straightforward when the appropriate equipment is available. As the LifeVac produces nearly four times the pressure generated by abdominal thrusts; it is not recommended to demonstrate the device on a living volunteer. The device also cannot be demonstrated effectively using conventional resuscitation manikins i.e. where the simulated airway is not constructed for this purpose.

Further information, including instructional videos can be found at [www.lifevac.net.au](http://www.lifevac.net.au)

## Management of Choking Emergency

