Appendix 13
Standards for *cardiac arrest* education sessions

Context

The ANZCA CPD standard requires participants to complete two of the four activities from the Emergency Responses category during each CPD triennium.

The purpose of this document is to assist hospital departments, private practice groups and continuing medical education providers to develop and/or conduct these education sessions.

Education Sessions are required to include a practical simulation component. Simulation in this context may mean bench top training in a local department, not necessarily fully immersive mannequin based simulation in a centre.

Hospital departments and private practice groups are encouraged to develop education sessions that satisfy local needs, incorporating local staff, work environment and equipment.

Background to cardiac arrest activity

Perioperative cardiac arrest is rare but all specialist anaesthetists, and specialist pain medicine physicians whose practice includes interventional procedures, should be prepared to deal with such a crisis if it occurs. This requires a clear understanding of current Basic and Advanced Life Support guidelines.

Perioperative cardiac arrests have different aetiologies, risk factors, presenting rhythms and survival rates compared to out-of-hospital and general in-hospital cardiac arrests.

Definitions and terms

All definitions and abbreviations used are to be consistent with those of the Australian Resuscitation Council (ARC) and the New Zealand Resuscitation Council (NZRC). The following acronyms are relevant to this document:

CA Cardiac arrest
BLS Basic Life Support
ALS Advanced Life Support

For the purposes of clarifying terms that are used within this document, the following definitions are provided:

Clinical Lead - The medical officer nominated by each department/group to oversee the provision of the Cardiac Arrest education sessions conducted by that provider. Does not necessarily need to attend the session in person. Needs to be at level of Consultant, and appropriately skilled and experienced to oversee the development of the session content. Ideally the clinical lead will have medical education experience and/or credentials. The clinical lead is encouraged to complete a provider course for the algorithm being taught, where one has been established.May assume the role of lead facilitator for a particular session.

Lead Facilitator. The medical officer who oversees the conduct of a Cardiac Arrest education session. Needs to be at a level of ATY2 or higher, and be appropriately skilled and experienced to deliver the content of the session. Ideally the lead-facilitator will have medical education experience and/or credentials.

Instructor. A person who conducts the individual "hands-on" skills stations/scenario rehearsals with guidance from the lead facilitator. Does not necessarily need to be a medical officer. Needs to be appropriatey skilled and experienced. Ideally the instructors will have medical education experience and/or credentials.

Recognised emergency algorithms

ANZCA exclusively endorses the ALS guidelines co-badged by the Australian Resuscitation Council and the New Zealand Resuscitation Council. Specialists with specific sub-specialty practice, or specialists resident in other countries, should contact the ANZCA CPD department to ascertain if alternative guidelines are recognised for their individual circumstances.

Learning objectives

As a minimum, education sessions are required to provide the opportunity for participants to meet the learning objectives listed below. Objectives marked with an asterisk (*) require participants to actively engage in hands-on activities to practice this skill during the session.

By the end of the education session, participants will be able to:

1. Describe the BLS and ALS algorithms including 'shockable' and 'non shockable' pathways
2. Recognise ventricular fibrillation (VF), pulseless ventricular tachycardia (VT), pulseless electrical activity (PEA) and asystole.
3. Describe reversible causes of cardiac arrest in any setting:
    - 4 H's
        - Hypoxia
        - Hypovolaemia
        - Hypothermia
        - Hyperkalaemia
    - 4 T's
        - Tension pneumothorax
        - Tamponade
        - Toxins
        - Thromboembolism

4. Recognise other causes of cardiac arrest that are relatively more specific to the perioperative setting (anaphylaxis, local anaesthetic toxicity, gas or fat embolism, high-spinal, complete heart block)
5. Recognise the clinical features of cardiac arrest*
6. Initiate the management of patients with cardiac arrest*
7. State the appropriate timing and role of endotracheal intubation in ALS. (Technical expertise with airway management is assumed, and need not be demonstrated).
8. Explain ventilation strategies, including need to recognise life-threatening auto-PEEP.
9 Demonstrate external cardiac compression*

10. Recognition of need for early defibrillation if shockable rhythm
11. Demonstrate the safe use of a defibrillator* (It is strongly recommended that practitioners familiarise themselves with the type of defibrillator(s) available in their usual workplace/s)
12. Demonstrate the appropriate selection and administration of drugs in cardiac arrest*
13. Demonstrate leadership, including clear instruction of resuscitation priorities to team*
14. Recognise return of spontaneous circulation
15. Discuss the appropriate time and manner in which to cease resuscitation efforts
16. Describe the fundamentals of post-resuscitation care (?)

Optional

Education session providers may elect to expand the focus of teaching to include additional objectives if it is deemed that this would facilitate more effective teaching for the particular target audience. Suggestions for consideration include:

- Non-technical factors that contribute to poor outcomes during management of peri-operative cardiac arrest and strategies for managing these
- Cardio-version and external pacing
- Recognition of peri-arrest arrhythmias
- Legal, ethical, and occupational health and safety issues associated with ALS interventions
- Documentation requirements around cardiac arrest

Structure of the education session

The education session is required to:

1. Provide pre-course reading that refers to the relevant algorithms/guidelines used in the session and provides relevant foundation knowledge of the session content.

2. Have an overall duration of ninety (90) minutes and provide hands-on activities, which include scenario-based rehearsal, to achieve objectives marked with an asterisk (*). A minimum of eighty (80) minutes of group practise is recommended.

3. Be deliverable as a continuous session or in parts.

4. Include a variety of team-based scenarios, including shockable and non-shockable rhythms.

5. Be conducted by a lead facilitator and provide at least one instructor per four participants. Instructors need to observe each participant while they are working through scenarios and provide verbal feedback to ensure they are achieving the objectives of the session.

6. Utilise the following equipment:

    - mannequin that can:
        - be ventilated via bag-mask
        - be intubated
        - have CPR performed on it

    - be defibrillated
- self-inflating bag plus face mask
- laryngeal mask/s
- endotracheal tube plus laryngoscope
- defibrillator
- ability to display relevant arrhythmias, either on a monitor or in hard copy

Session Materials

Session materials, in hard copy or electronic form, need to include the following:

- Session objectives
- Session outline
- Facilitators' guide (including equipment list, scenario outlines, and a guide to the safe use of the defibrillator/s to be used)
- ALS algorithms as handouts
- Session evaluation forms for feedback from participants (see Resources below)
- Participant list containing the date, venue, names and appointment types of participants.