Standards for *Can't Intubate Can't Oxygenate* (CICO) 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.

The 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.

Assessment, planning and preparation are of paramount importance in managing the difficult airway, and are considered essential steps before embarking on an anaesthetic. These issues are beyond the scope of the CICO education session defined in this document, but practitioners are strongly encouraged to review them before attending.

BACKGROUND TO CICO ACTIVITY

CICO situations occur infrequently but as specialists, we must be prepared to deal with such a crisis if it arises. Recent coroners cases have highlighted the need for regular, formal training in order to maintain familiarity with equipment and techniques. Numerous factors are recognised that pose challenges to anaesthetists in this situation, including:

- Uncertainty as to when to declare a CICO situation;
- Unwillingness to desist with supraglottic approach to airway rescue (including endotracheal intubation) as the primary method for managing the obstructed airway;
- Lack of familiarity with surgical airway techniques;
- Inadequate access to appropriate equipment; and
- Underdeveloped skills in leading a team in this crisis.

Anaesthetists should be able to recognise when this situation has arisen, declare it as a 'CICO situation' and commit to airway interventions delivered via the anterior surface of the neck (i.e. infraglottic) aimed at bypassing the obstruction to deliver oxygen. Anaesthetists should have a methodical approach to supraglottic airway management to ensure all reasonable efforts are made to maintain or restore oxygenation and to avoid infraglottic rescue if possible. Equally they should understand that persistent attempts at supraglottic rescue without concomitant infraglottic rescue interventions increase a patient's risk of death or serious hypoxia related morbidity.

Knowledge of emergency algorithms, recognition of CICO, familiarity with equipment and rehearsal of emergency procedures are essential components of training. *Ideally this training occurs within a team, and in the specialist's regular working environment.*

DEFINITIONS AND TERMS

No universally agreed definitions exist for much of the nomenclature around CICO. For the purposes of clarifying terms that are used within this document, the following definitions are provided. Alternative definitions may be used in CICO workshops, however providers should demonstrate that these have equivalent meaning.

Can't Intubate Can't Oxygenate (CICO)
Where airway obstruction exists in the upper airway (including the larynx) that cannot be relieved by airway management interventions delivered above the point of obstruction (ie: supraglottic), and which results in an inability to oxygenate the patient with low or falling oxygen saturations.

Supraglottic airway management
Airway management techniques performed above or through the larynx (including bag-mask ventilation, laryngeal mask, or endotracheal intubation) aimed to maintain airway patency.

Supraglottic airway rescue
Airway management techniques performed above or through the larynx aimed to restore airway patency.

Infraglottic airway rescue
Airway management techniques performed below the larynx via the anterior surface of the neck aimed to maintain or restore airway patency. This includes techniques such as needle or surgical cricothyroidotomy.

Clinical Lead
The medical officer nominated by each department/group to oversee the provision of the CICO 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. May assume the role of lead facilitator for a particular session.

Lead Facilitator
The doctor who oversees the conduct of a CICO 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 doctor with relevant anaesthesia skills and experience who conducts the individual "hands-on" skills stations/scenario rehearsals with guidance from the lead facilitator. Ideally the instructors will have medical education experience and/or credentials.

RECOGNISED EMERGENCY ALGORITHMS

At this stage, ANZCA does not exclusively endorse any one emergency algorithm for CICO situations but recognises the need for clinicians to be familiar with at least one. The following algorithms are recommended by ANZCA and the Airway Special Interest Group as being suitable for use in infraglottic rescue and should be read in conjunction with the accompanying background articles:

- CICV Algorithm. Heard AM, Green RJ, Eakins P. The formulation and introduction of a 'can't intubate, can't ventilate' algorithm into clinical practice. *Anaesthesia*. 2009; 64(6):601-8.
  Heard A. *Percutaneous Emergency Oxygenation Strategies in the "Can't Intubate, Can't Oxygenate" Scenario.* 2013. Ebook, last accessed Dec 2013.

- Difficult Airway Society (DAS) Failed Ventilation.
  Henderson JJ, Popat MT, Latto IP, Pearce AC. Difficult Airway Society guidelines for management of the unanticipated difficult intubation. *Anaesthesia.* 2004; 59: 675-94

- Canadian Difficult Airway Focus Group
  Law J et al. The difficult airway with recommendations for management – Part 1 – Difficult tracheal intubation encountered in an unconscious/induced patient. *Canadian Journal Anaesthesia*. 2013 (60): 1089-1118.

Highly recommended pre-reading for participants:
Greenland KB, Acott C, Segal R, Goulding G, Riley RH and Merry AF. 2011. Emergency surgical airway in life-threatening acute airway emergencies – why are we so reluctant to do it? *Anaesthetic Intensive Care* 39(4): 578-584

Providers of any courses (including "instructor" courses) must present the chosen algorithm in a manner that accurately reflects the algorithm as published, as per the expected standards of any scholarly activity

LEARNING OBJECTIVES

As a minimum, education sessions must 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. Apply criteria to recognise when a CICO situation has arisen.
2. Communicate clearly to others that a CICO situation exists*.
3. Explain the steps and decision-making points in one of the recognised difficult airway algorithm that addresses CICO (refer to list of recognised algorithms above).
4. Be fluent with equipment and procedures relevant to the preferred emergency algorithm for infraglottic rescue*.
5. Direct/team-lead an emergency response for CICO including the following steps*:
    a. Clearly explain supraglottic airway rescue strategies (technical expertise is assumed)
    b. Transition to CICO
        i. Anticipate and mobilise resources for imminent infraglottic rescue
        ii. Recognise and declare CICO (As per definition of CICO above)
    c. Infraglottic airway rescue
        i. Implement the chosen emergency algorithm
        ii. Continue supraglottic airway rescue

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:

- Recognise the relationship of CICO to anaesthesia related mortality, and the major risk factors for CICO.
- Recognise the non-technical factors that contribute to poor outcomes when CICO arises, and strategies to overcome them.

STRUCTURE OF THE EDUCATION SESSION

The education session is required to:

1. Provide pre-course reading that refers to the selected CICO algorithm used in the session and provides relevant foundation knowledge of the session content.
2. Be deliverable as a continuous session or in parts
3. Provide hand-on activities, which include scenario-based rehearsal to achieve objectives marked with an asterisk (*). A minimum of eighty minutes of practise is recommended.
4. Be conducted by a lead facilitator and provide at least one instructor per four participants. Facilitators 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.
5. Utilise the following equipment:
    - models of the neck allowing practice of infraglottic airway placement;
    - oxygen for oxygen delivery for infraglottiic rescue; and
    - equipment relevant to preferred emergency algorithms

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)
- CICO algorithms as handouts
- Session evaluation forms for feedback from participants
- Participant list containing the date, venue, names and appointment types of participants.