



# Structured approach and Basic Airway Management

Airway module A1

This project was possible due to funding made available by Health Workforce Australia



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## Introductions



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Very quick round the room to assess stage of professional development for each participant.

## General Aims

- Learn in a team setting
- Clinical skills blended with team skills
- Critically reflect on practice

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- This session, and package as a whole, involves learning together. Learning with the teams that you work with helps that team to function more efficiently and effectively. It allows you to learn from each other, explore different perspectives and to understand the importance of all members of the team.
- We are targeting higher level learning – applied skills and performance in contextualised events. This is through team discussion and also through working through simulated scenarios as a team. It also allows you to put into practice knowledge attained from the VLE and other solo learning environments.
- To review and reflect upon our own practice and current best practice standards. During our feedback sessions we will facilitate this but we would also encourage you to reflect on your practice and experience after these sessions.

## Ground Rules

- Participation
- Privacy
- Confidentiality
- Disclaimer
- Debriefing
- Mobile phones



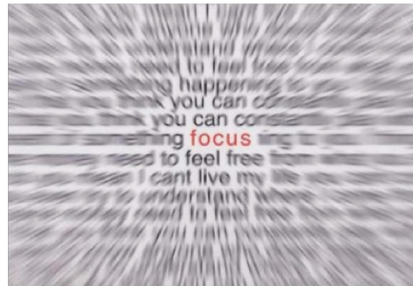
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- Challenge of video conferencing tips: don't change your seat, speak up nice & clearly
- Details collected and de-identified for reporting purposes
- Signed form, don't speak outside about how people performed as not necessarily indicative of real life, chance to try new things, don't tell anyone about the scenarios as they used again on subsequent courses.
- We try to use best evidence practice and strive to include as up-to-date material as possible. Please do refer to your local policies, guidelines and protocols.
- Debriefing is a chance to reflect upon what we did and how that translates to the workplace. Please use this time to explore the complexities of performance and decision making. Please contribute, we will all learn from each other's experiences.
- Like most things in life, the more that you put in the more you will take away with you.
- It is an open forum where everyone's ideas and thoughts are to be valued.
- If you could please switch your phones off or to silent or vibrate for the duration of the course.

## Objectives

- To understand the importance of a structured approach to the airway in the emergency department
- To develop an approach to assessment of the airway
- To consider the options of management of the emergency department airway
- To rehearse the use of simple airway manoeuvres in airway management
- To develop an understanding of airway adjuncts

Patients don't die from failure to intubate.....they die from failure to oxygenate.



**DON'T GET FIXATED ON THE PLASTIC**

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It is important to understand that often simple procedures such as jaw thrust, chin lift and the addition of airway adjuncts to support the airway may allow for adequate oxygenation.

These skills are the basis for all airway management and are the first steps in “owning the airway”.

Oxygenation is an absolute priority and in most cases can be achieved with simple airway manoeuvres, positioning and BVM ventilation.

It is important not to become fixated on the plastic – although intubation is the gold standard in airway management for maintaining a patent and protected airway, the procedure should be performed by the right person, with the right skills at the right time, in the right place, with the right preparation, with the right back up plan. In the mean time, these simple measures should be performed.

## Airways in an Emergency

- Multiple factors increase complexity
  - Blood /fluid /secretions
  - Not Fasted
  - Unstable haemodynamics
  - Underlying pathology impairs preoxygenation / positioning / anatomy
- By definition, is difficult
- Different to elective anaesthesia where full assessment can be done pre-ETT
- Unlike elective anaesthesia, may not have the option of waking patient and postponing procedure
- Must have an exit strategy or plan B

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EDs can present airway challenges at any time---in any ED. Every person in the ED team must know what their skill set is, when and who to call. Your driving principle is to oxygenate and ventilate the patient.

Managing the airway in the Ed has the complexities described above, as well as many others. This may be a good point to involve the participants in describing difficulties that they may anticipate in the emergency department.



## Assessment of the Airway

- Focused History and Examination
  - Maintain Patent airway
  - Protect airway from aspiration
  - Adequacy of Ventilation and Oxygenation
  - Anticipation of loss of the above
- Assessment for Difficulty
- C-Spine Protection
- Available Skills for safe airway management

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The assessment of the airway is the A in the structured approach to the management of the critical patient in the emergency department. Simultaneous management may be required whilst further assessment and preparation for definitive management proceeds.

A focused airway history and examination seeks to determine the need for intervention. Intervention may be required if the patient does not, or is anticipated not to be able to maintain a patent airway, protect the airway from aspiration or adequately ventilate or oxygenate for their current clinical condition.

It is important to assess for difficulty of the airway, which is discussed in the next slides.

In trauma the airway is linked with the cervical spine and consideration of the need for protection should be assessed. This is because many of the maneuvers in airway management involve moving the C-spine, which may exacerbate any injury.

When assessing the airway the available resources and individual skill level should be considered, with early mobilisation of resources if required. This is a multifactorial decision.

Adequacy of ventilation is an aspect of the B component of the structured approach, assessing the adequacy of ventilation is discussed on the next slide.

## How do you know if there is adequate ventilation

- Look** For chest rise and fall.  
At the skin colour of the patient.  
Look for wave form capnography.
- Listen** For voice, stridor, snoring.  
For breath sounds on auscultation.  
For the pulse oximeter.
- Feel** The chest rise and fall.  
For air on exhalation.

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Look, Listen and Feel are the basic principles of airway assessment taught in basic life support. This is the B component of our ABCDE approach. In the emergency department there are additions of monitoring that can be added to the assessment process. These principles will be re-applied in the airway modules for assessing adequacy of ventilation in the intubated and non-intubated patient.

## Assessing Difficult Management

- BOOTS (ventilation)
  - Bearded
  - Older (>55)
  - Obese (BMI >26)
  - Toothless
  - Snores
- LEMON (intubation)
  - Look externally
  - Evaluate 3:3:2
  - Mallampati
  - Obstruction Obesity
  - Neck Mobility

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The term “difficult airway” has no clear universally accepted definition. Because of this, literature is difficult to interpret, AND MORE IMPORTANTLY, recorded information in the medical record of “difficult airway” can mean different things to different people.

A popular definition of difficult intubation is one that requires excessive lifting force, external laryngeal manipulation, multiple devices, multiple operators, multiple attempts or is performed with an inadequate glottic view. The opponents to this definition feel that “difficult intubation” is not the issue and consider it far more important to focus on “failed intubation”.

There are multiple systems of assessment because none are both sensitive and specific enough to ensure that no patient would be missed in the assessment. Even with meticulous assessment, only 50% of difficult intubations can be predicted.

Lemon ; has been prospectively validated in trial of 156 patients.

L Look externally → general impression / body habitus / unusual anatomy / facial trauma

E Evaluate 3:3:2 → Size of mandible / distance between mentum and hyoid / extent of mouth opening

3 ; Assesses mouth opening. 3 of patient’s fingers can be placed between their

## Airway Management

- Simple airway maneuvers
- Nasal Prongs
- Oxygen Masks – variable and fixed
- Airway Adjuncts
- Bag Valve Masks
- Non-Invasive Ventilation
- Laryngeal Masks
- Intubation
- Surgical Airway

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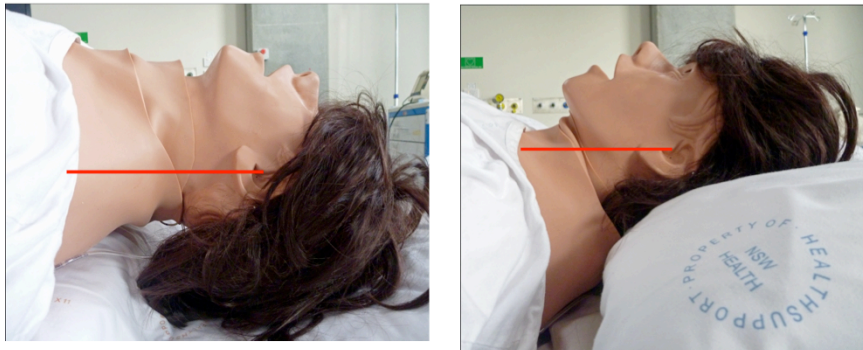
There are multiple options for management of the airway – for both oxygenation and ventilation of the patient.

The choice will depend on the patient's clinical condition during the assessment, the skill of the managing team and the resources available.

These management options will be discussed in the EdWISE Airway combined modules.

## Basic airway opening manoeuvres

Aligning the external auditory canal and sternal notch.



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In the supine patient the axis of the oral cavity is approximately at right angles to the axis of the pharynx and the trachea.

In order to open the airway these airway axes should be aligned.

By flexing the lower cervical spine at the cervicothoracic junction and extension of the upper cervical spine then this alignment can be obtained.

This is the sniffing position (position you may sniff roses or alternatively blow the head off a glass of beer.)

The external auditory canal should be aligned as close as possible with the sternal notch.

## Jaw thrust

- Use two hands.
- The angle of the jaw is lifted forwards.
- This causes subluxation of the mandible bilaterally and pulls the tongue away from the posterior pharynx thus opening the airway.



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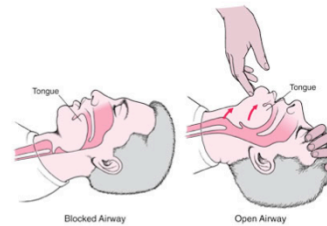
Chin lift and jaw thrust are 2 airway manipulation manoeuvres used to assist in opening the partially or completely obstructed airway.

The jaw lift has been shown to be superior to the chin lift in relieving functional obstruction(3,4). It is also able to be used in patients who have suspected C-spine injuries.

The tongue is anchored to the mandible so when the mandible is lifted forward it pulls the tongue forward away from the posterior pharyngeal wall. Correctly performed you actually sublux the mandible bilaterally

## Chin lift

- First place the patient in the “sniffing” position.
- Stabilise the forehead with the palm of 1 hand whilst 2-3 fingers of the other hand lift the chin forward thus pulling the tongue away from the pharynx.

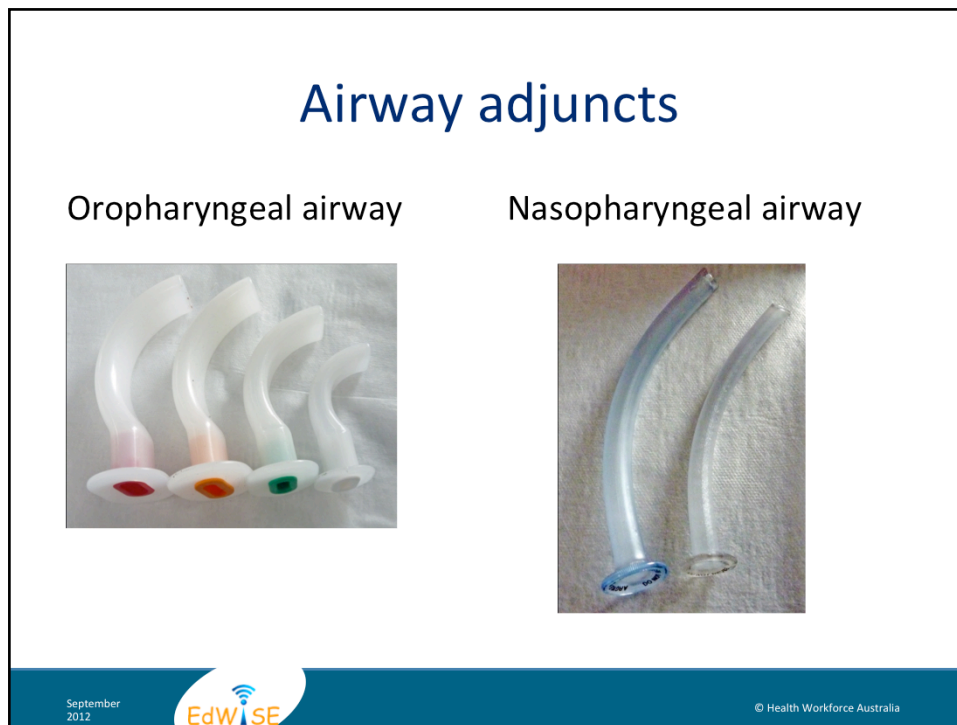


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Chin lift is not generally as effective as a jaw thrust. Also since it requires neck manipulation a chin lift is relatively contraindicated in suspected cervical spine trauma.



Both the oropharyngeal and nasopharyngeal airways are airway adjuncts designed to create a patent airway by bypassing the obstruction caused by the tongue and soft palate on the posterior pharyngeal wall.

They are both simple in design and easy to insert given the correct technique.

#### Oropharyngeal Airways

Also known as a Guedel airway, named after Arthur Guedel an American anaesthetist who designed it.

The Guedel airway is made of plastic and is a hollow curved tube with a proximal flange. They are colour coded for size

Sized from the corner of the mouth to the angle of the jaw.

Choosing the correct size is important. If it is too small the Guedel will sit on the obstructing tongue, whilst if it is too big it may cause laryngospasm(5)

In order to tolerate a Guedel airway the patient must have a significant decrease of consciousness in order to blunt the airway reflexes.

Introduce the Guedel concave side upwards. Continue as far as you can along the hard palate until you feel resistance then rotate the airway 180 degrees and continue pushing gently forward until the flange sits comfortably against the lips.

#### Nasopharyngeal Airways



# Scenario

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## Scenario

David Beckham, 38 year old

Known alcoholic who is waiting to be seen by the doctor. He was off loaded from the ambulance 2 hours ago and is still waiting to be seen. He has just started to have a seizure whilst his observations were being taken.

## Summary

- A structured approach to the airway will assess the need for management and expected difficulty.
- Oxygenation and ventilation are the aims of management
- Simple maneuvers and adjuncts can be helpful in supporting the airway

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