

The Sutherland Emergency Department Airway Corner Newsletter

July 2019

	July			Δ June		
Number of intubations	9			3		
Indications	Trauma		Medical:	Trauma		Medical:
	0		ICH/Stroke: 0 Overdose/Ingestion: 1 Sepsis/Resp Failure: 3 Cardiac Failure: 0 Arrest: 3 Other: 2	0		ICH/Stroke: 0 Overdose/Ingestion: 1 Sepsis/Resp Failure: 1 Cardiac Failure: 0 Arrest: 0 Other: 1
Team-leader	FACEM	AT	Other	FACEM	AT	Other
	7	1	1	2	1	0
Intubator	FACEM	AT	Other	FACEM	AT	Other
	3	4	2	0	2	2

Airway ax performed	Yes 7 / No 2			Yes 2 / No 1		
Checklist utilisation	Yes 8 / No 1			Yes 2 / No 1		
ApOx used	Yes 9 / No 0			Yes 2 / No 1		
Induction rx	Ketamine	Propofol	Other	Ketamine	Propofol	Other
	5	1	1	2	2	0
Paralytic rx	Rocuronium		Suxamethonium	Rocuronium		Suxamethonium
	5		2	2		1
Laryngoscope	Direct		Video	Direct		Video
	1		8	1		2
First pass success rate	100%			33%		

	Nil	NPA/OPA	BVM	LMA	Repositioned	Cric	Nil	NPA/OPA	BVM	LMA	Repositioned	Cric
	Intubation manoeuvres	0	0	0	0	0	0	1	0	2	0	0
Desaturation	None						2					
Hypotension	2						None					
Equipment Failure	None						1					
Aspiration	None						None					
Oesophageal intubation	None						1					
Mainstem intubation	None						None					
Laryngospasm	None						None					
Drug error	None						None					
Airway trauma	None						None					
Cardiac arrest	None						None					

Case Observations

Overall a very good month with 100% first pass success for intubations in the ED with some difficult airways. Remember if there is anticipated to be significant bleeding or soiling in the airway to lead with suction and have a backup suction ready to be used. Be prepared to use direct laryngoscopy if the video screen is obstructed and the view is lost due to blood or secretions, simply use the CMAC blade for DL rather than looking at the screen. Always remember to use adequate PPE including gown, facemask and/or protective eyewear.

Equipment Fact of the Month: Paediatric CPAP

Due to a recent case, we have come up with a temporary solution for the lack of availability of paediatric CPAP in the emergency department. All of the necessary equipment will be kept in a premade bag in the paediatric resus bay with the equipment available below. In the future we are awaiting a more formalised protocol for paediatric CPAP for use in ED. When considering the use of paediatric CPAP in ED it is necessary to liaise with our NETS colleagues with plans for retrieval to a paediatric intensive care unit. For children less than 5kg the Neopuff can be used.

Possible indications for paediatric CPAP or BiPAP in the emergency department:

- Hypercapnic/hypoxic respiratory failure
- Status asthmaticus
- Pulmonary oedema

Contraindications to CPAP or BiPAP use include:

- Cardiopulmonary arrest
- Acutely impaired mental status
- High aspiration risk
- Need for airway protection
- Untreated pneumothorax
- Facial injuries
- Haemodynamic instability requiring escalating levels of vasopressor support

Possible complications from CPAP/BiPAP can include

- Barotrauma
- Aspiration
- Haemodynamic instability due to decreased venous return
- Gastric distension

The current setup uses the Oxylog 3000 plus.

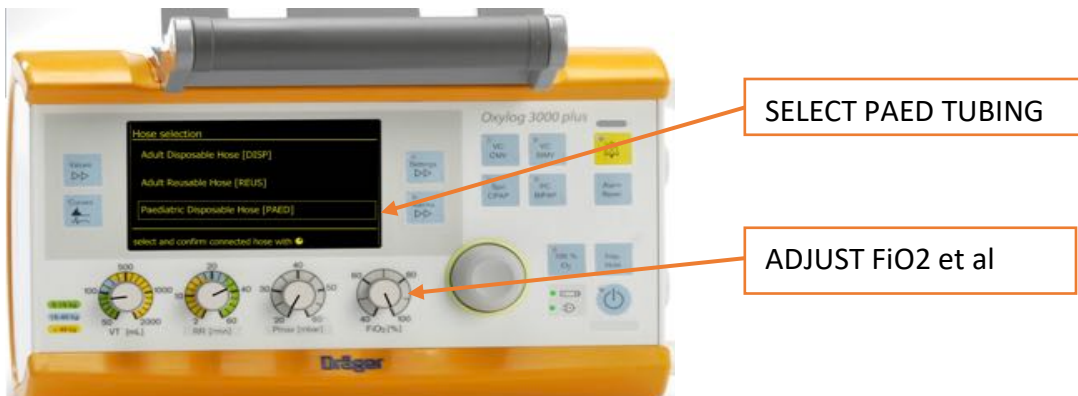
- Ensure ventilation mode is set to "Spn CPAP"
- Under "Settings" button – Turn NIV "On", HME "On" and decrease trigger to "1"
- Set required PEEP to 5 and PS to 10 (If required) and confirm with rotary knob
- Set FiO₂ – titrate for an Sats of 90 – 95%

Below is the current setup for a paediatric patient on CPAP in ED. The T piece nebuliser can be removed depending on the specific indication and ongoing treatment requirements:



We are working with anaesthetics and NETS to ensure we have a universal set-up. The make-shift mask straps are a temporary fix while we procure/find bespoke straps.

If you'd like to practice setting up the oxylog then you can go to resus or simply visit the oxylog simulator online (https://static.draeger.com/trainer/Oxylog3000Plus_2016/flashpage.htm?lang=en#id=E1200)



Word on the Street

The bottom line: This observation study using the Airway Registry data shows a significant increase in the use of ketamine as an induction agent over the study period. Possible reasons for this include recent literature showing a lack of evidence that ketamine is detrimental in head injuries. The strongest predictor of ketamine use for intubation was an emergency physician as team leader.



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ORIGINAL RESEARCH

Ketamine use for rapid sequence intubation in Australian and New Zealand emergency departments from 2010 to 2015: A registry study

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Abstract

OBJECTIVE: This study aimed to quantify the proportion of patients undergoing rapid sequence intubation using ketamine in Australian and New Zealand EDs between 2010 and 2015.

METHODS: The Australian and New Zealand Emergency Department Airway Registry is a multicentre airway registry prospectively capturing data from 43 sites. Data on demographics and physiology, the attending staff and indication for intubation were recorded. The primary outcome was the annual percentage of patients intubated with ketamine. A logistic regression analysis was conducted to evaluate the factors associated with ketamine use.

RESULTS: A total of 4658 patients met inclusion criteria. The annual incidence of ketamine use increased from 5% to 28% over the study period ($P < 0.0001$). In the logistic regression analysis, the presence of an emergency physician as a team leader was the strongest predictor of ketamine use (odds ratio [OR] 1.83, 95% confidence interval [CI] 1.44–2.34). The OR for an increase in one point on the Glasgow Coma Scale was 1.10 (95% CI 1.07–1.12), whereas an increase of 1 mmHg of systolic blood pressure had an OR of 0.98 (95% CI 0.98–0.99). Intubation occurring in a major referral hospital had an OR of 0.68 (95% CI 0.56–0.82), while trauma conferred an OR of 1.38 (95% CI 1.25–1.53).

CONCLUSIONS: Ketamine use increased between 2010 and 2015. Lower systolic blood pressure, the presence of an emergency medicine team leader, trauma and a higher Glasgow Coma Scale were associated with increased odds of ketamine use. Intubation occurring in a major referral centre was associated with lower odds of ketamine use.

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