

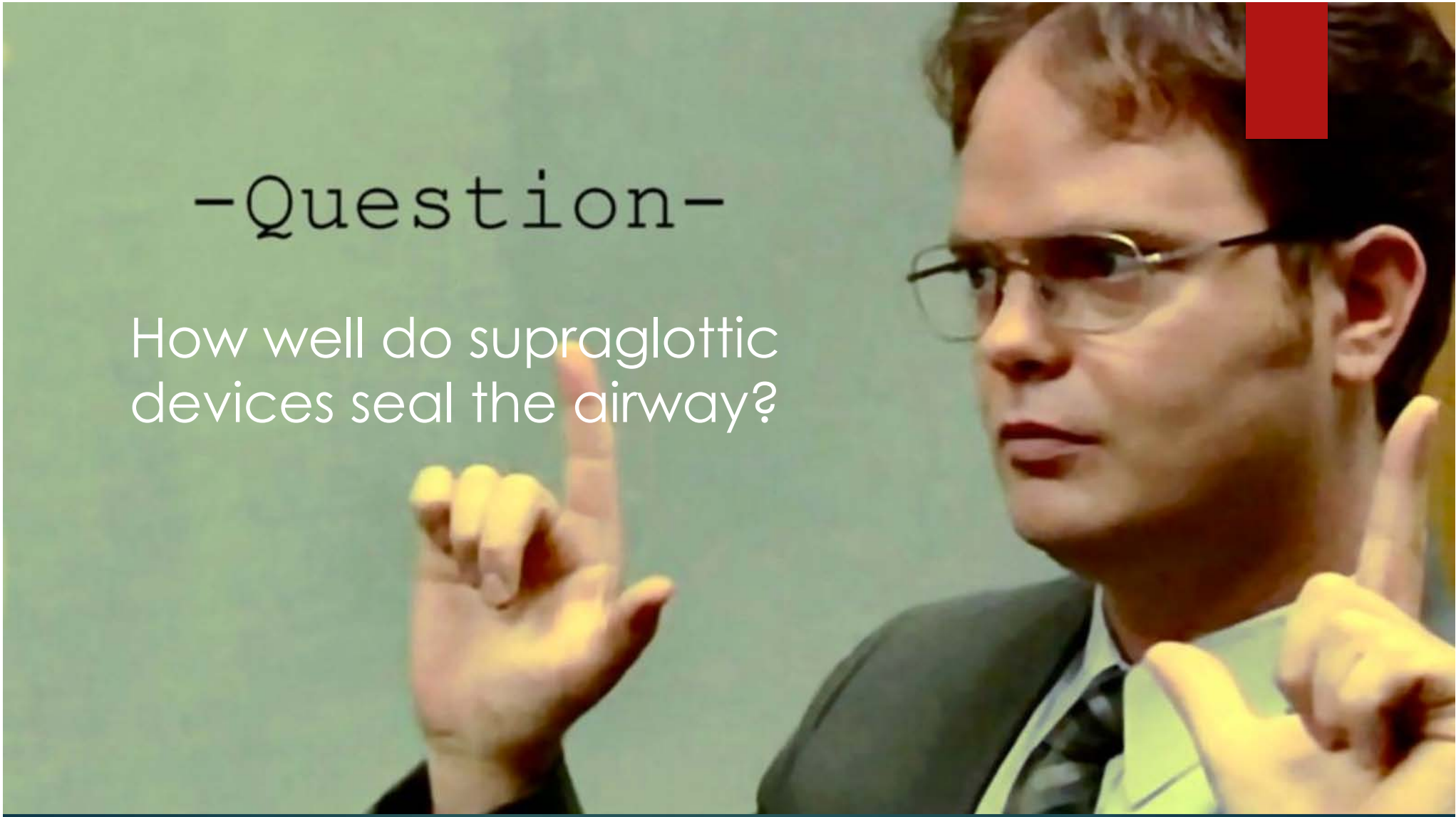


Super Info about SupraGlottics

JOE HOLLEY
SCOTT YOUNGQUIST
JON JUI

-Question-

How well do supraglottic devices seal the airway?

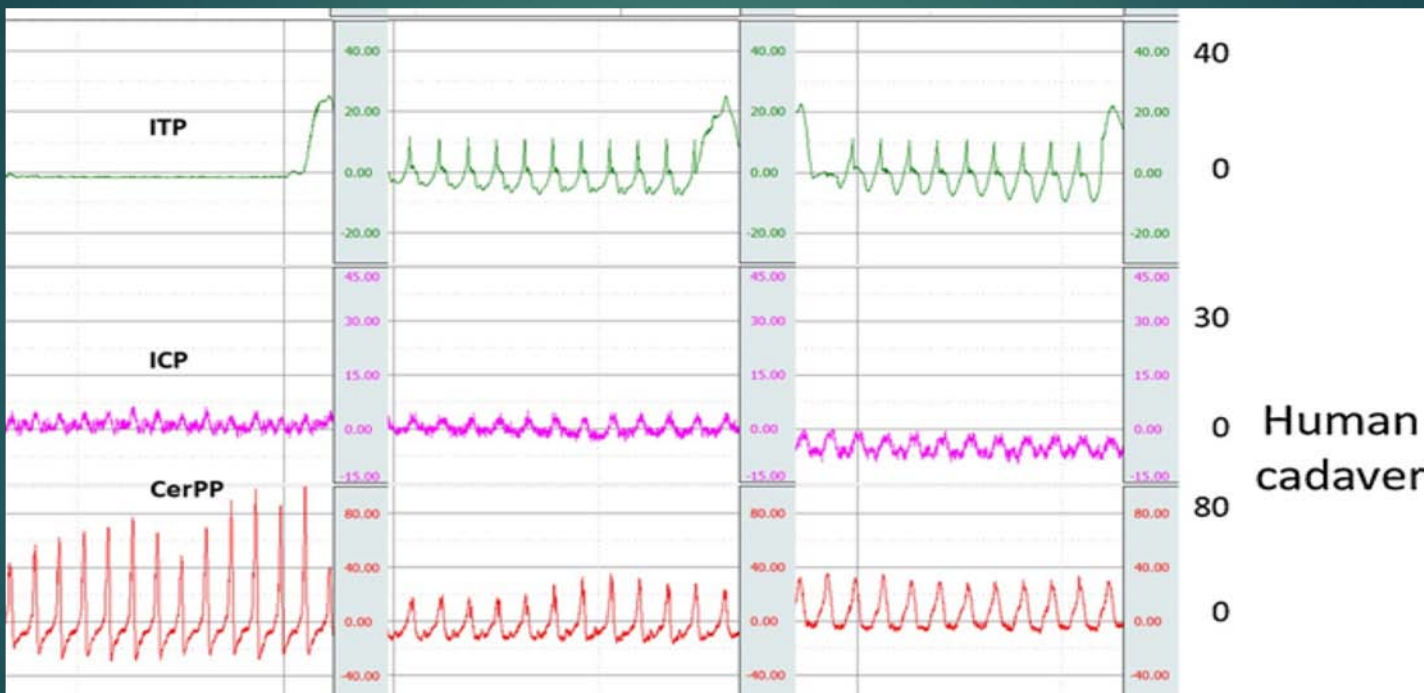


Effect of the ITD on Intracranial and Cerebral Perfusion Pressures

Standard CPR

ACD + ITD CPR

ACD + ITD CPR Head Up

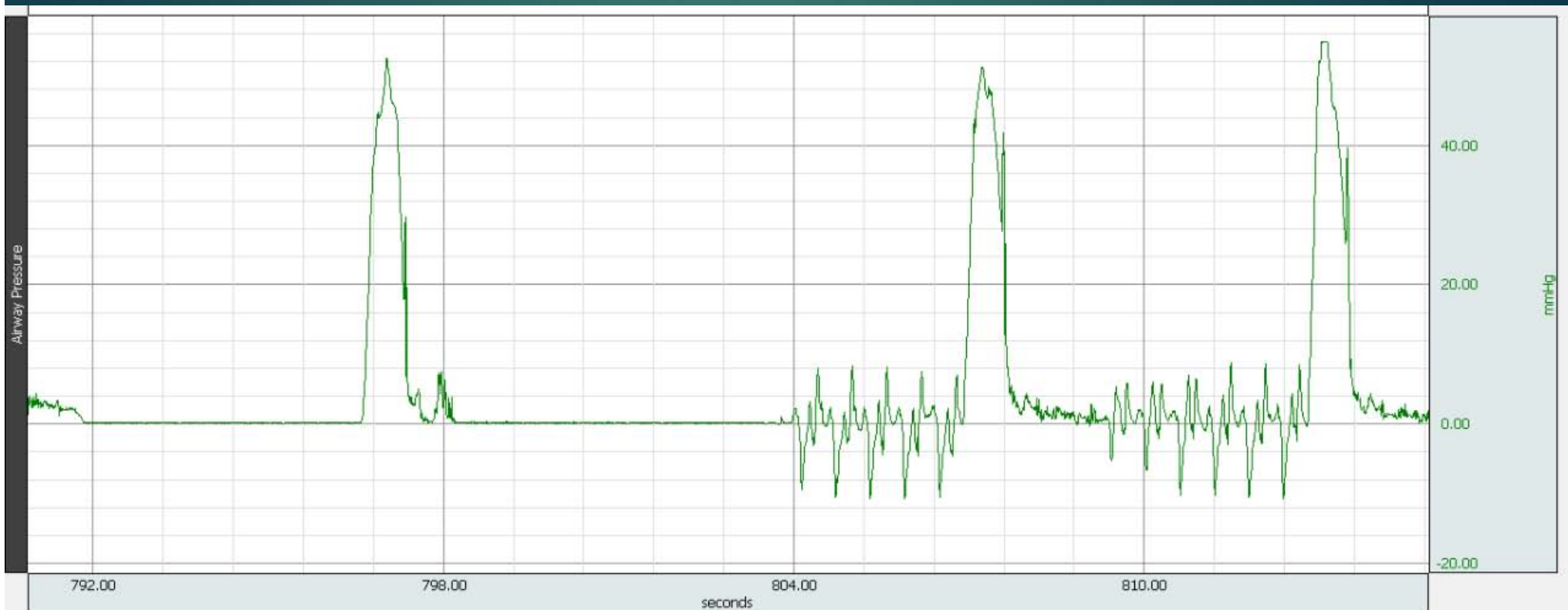


Human
cadaver

Automated High Quality CPR (LUCAS 2) with/without ITD 16

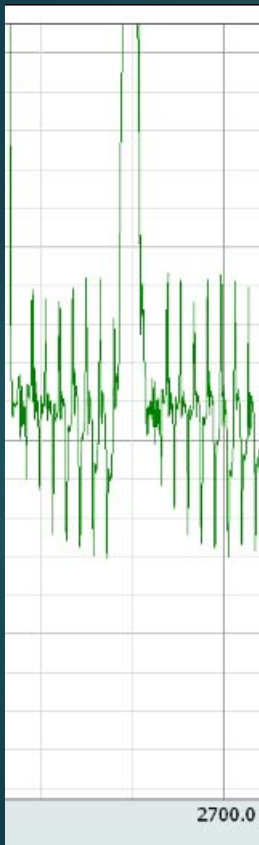
LUCAS without ITD

LUCAS with ITD 16

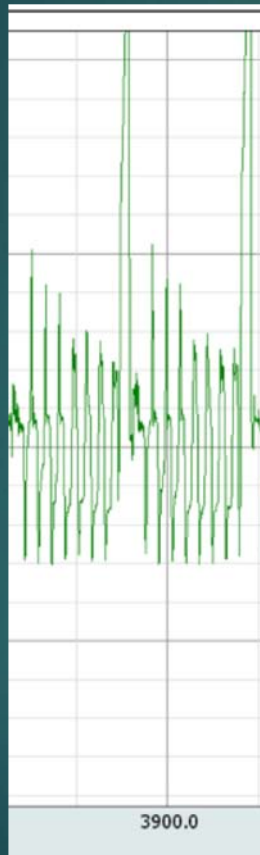


Automated CPR (LUCAS 2) with ITD 16

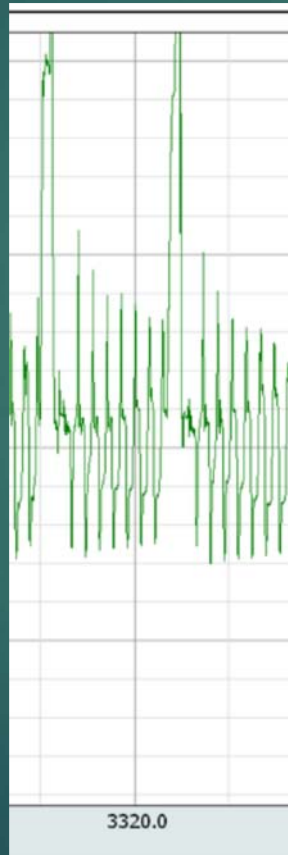
Et Tube



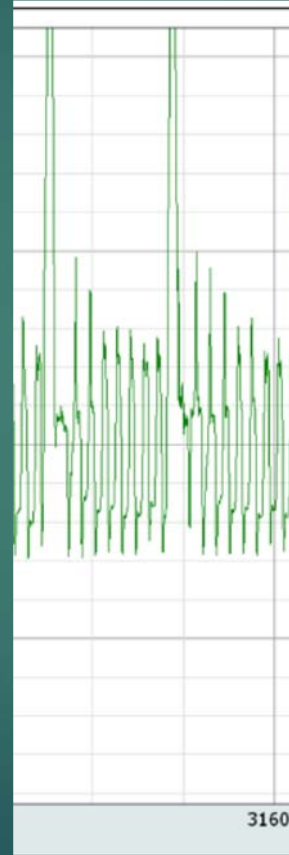
LMA



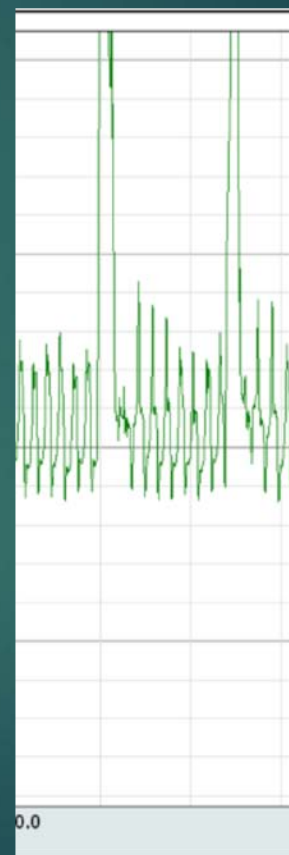
Igel



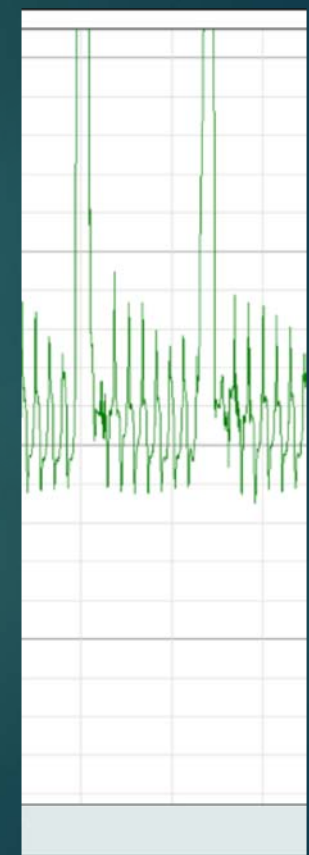
AirQ



KING



Combitube

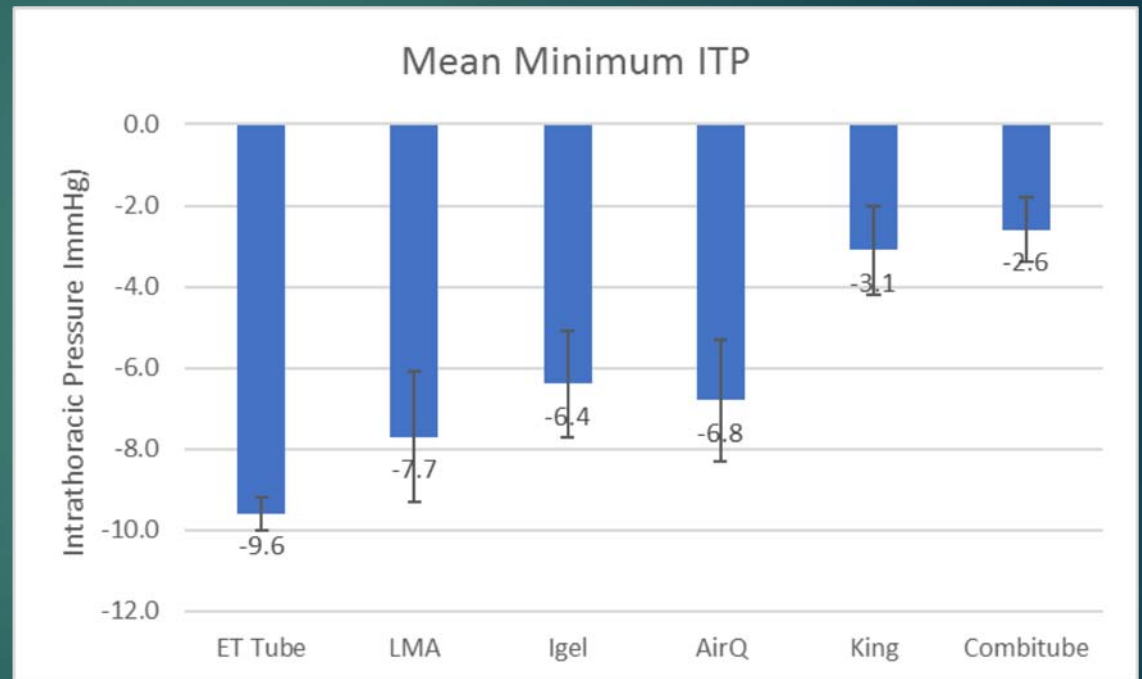


Hg

Measured Cadaver Data (n=7)

Automated CPR (LUCAS 2 with ITD 16)

	Mean Minimum ITP	Range
ET Tube	-9.6	0.4
LMA	-7.7	1.6
Igel	-6.4	1.3
AirQ	-6.8	1.5
King	-3.1	1.1
Combitube	-2.6	0.8



Active Compression-Decompression CPR with ITD

16

Et Tube

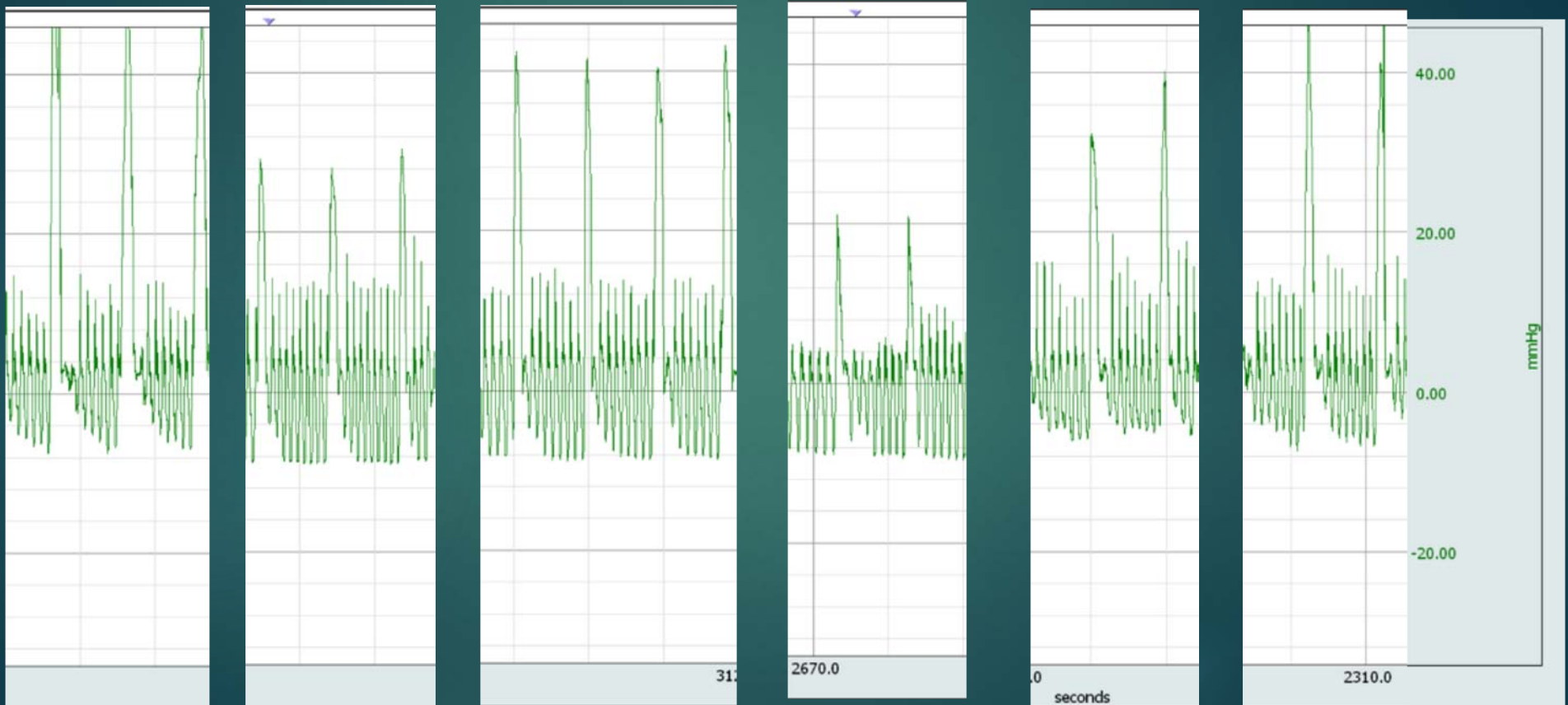
LMA

Igel

AirQ

KING

Combitube

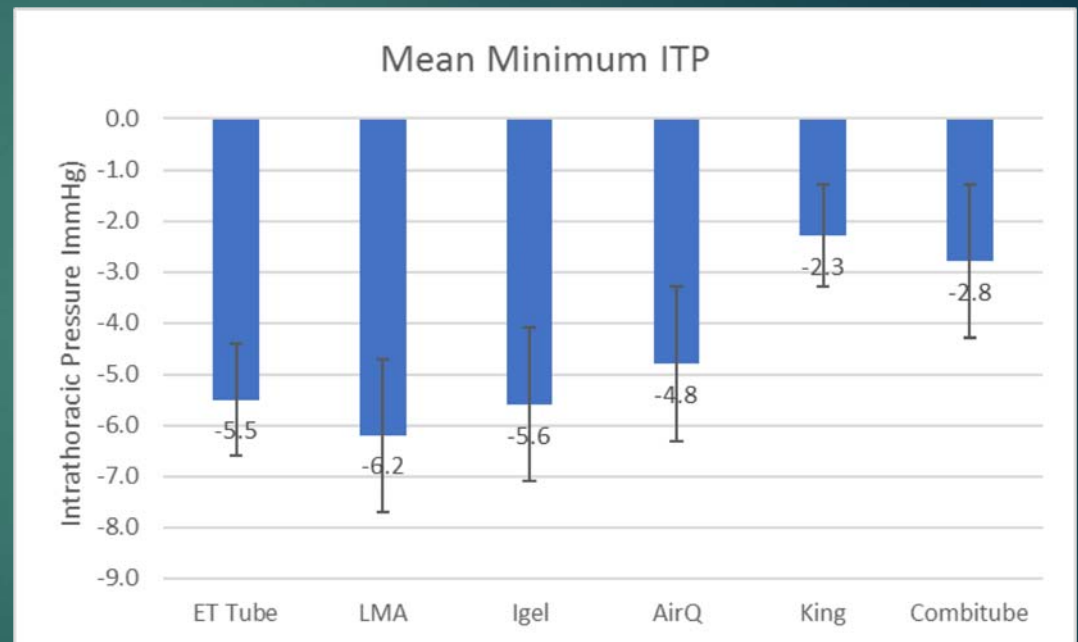


Measured Cadaver Data (n=7)

Active Compression-Decompression CPR with ITD 16



	Mean Minimum ITP	Range
ET Tube	-5.5	1.1
LMA	-6.2	1.5
Igel	-5.6	1.5
AirQ	-4.8	1.5



Active Compression-Decompression CPR with ITD 16 and Head Up

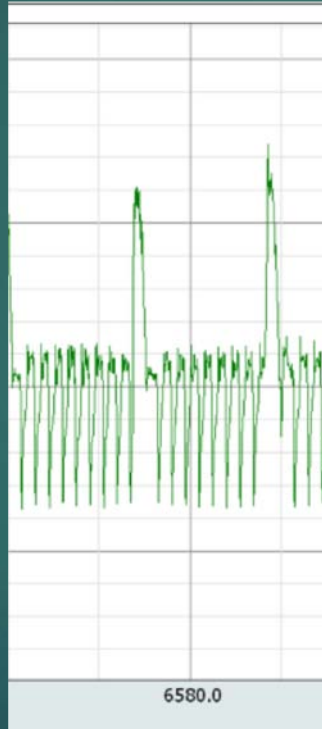
Et Tube



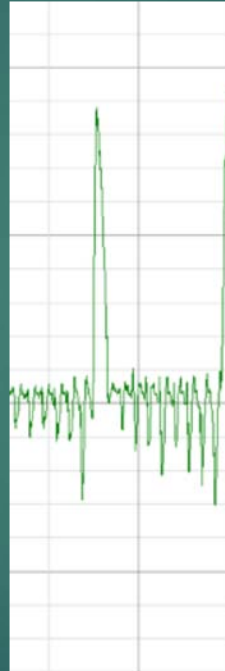
LMA



Igel



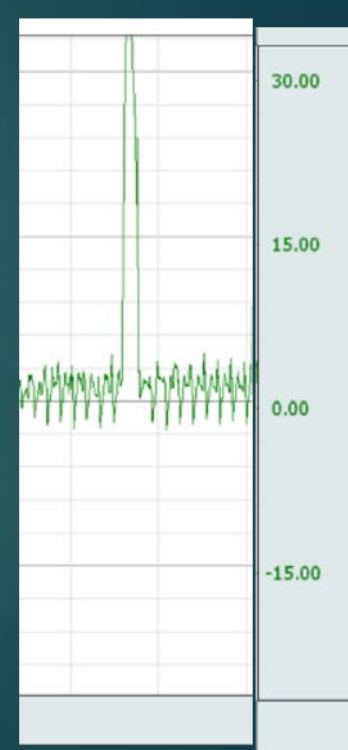
AirQ



KING



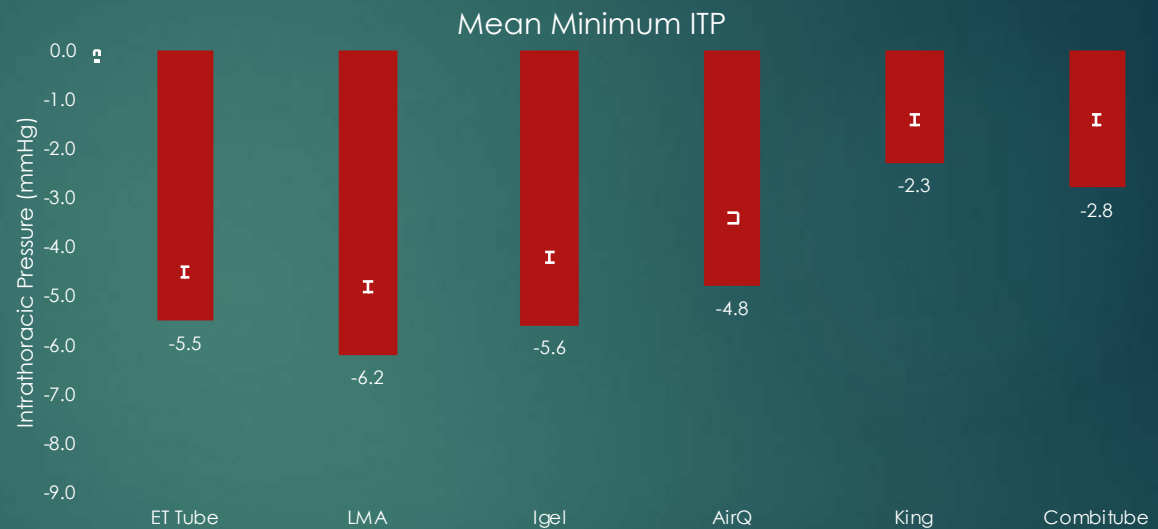
Combitube



Measured Cadaver Data (n=7)

Active Compression-Decompression CPR with ITD 16 and Head Up

	Mean Minimum ITP	Range
ET Tube	-5.6	1.5
LMA	-5.7	1.0
Igel	-4.9	1.5
AirQ	-5.5	0.9
King	-2.4	0.9
Combitube	-1.9	0.6



Take Home Message

Be careful how you secure the airway device

Cervical collars can effect flow

Choice of SGA impacts CPR Adjuncts/Enhancements

Choice of SGA impacts cerebral blood flow

-Question-

Does the iGEL work well in
adults and kids?



Multnomah County EMS

- 2018 MCEMS providers dispatched to 100,000 calls
- Advanced Airway approximately 500 patients per year
- MCEMS providers have drug facilitated airway capacity
- Advanced Airway training approximately 1/3 of all our training time and twice per year at minimum

Multnomah County EMS

- 2015, MCEMS transitioned from King Airway to i-gel airway device
- Pediatric Advanced Airway approximately 20 to 25 patients per year
- Adult i-gel success rate in 2017-2018 is approximately 94%



What is our 2017 I-Gel success rate?

MCEMS i-gel : January 1 to August 31, 2017

	Number	Percent
Successful	115	94%
Unsuccessful	7	6%
Total	122	100%

MCEMS 2017 i-gel Pediatric

Age	Success	Unsuccessful	Percent
< 1 years	3	1	75%
3 years	2	0	100%
Overall	5	1	83%



What is our I-Gel
success rate?

MCEMS i-gel : January 1 to August 31, 2018

	Number	Percent
Successful	111	94%
Unsuccessful	7	6%
Total	118	100%

MCEMS i-gel Pediatric 2018

Age	Success	Unsuccessful	Percent
< 1 years	3	0	100%
1-5 years	1	0	100%
Overall	4	0	100%

Pediatric I-Gel

MCEMS Pediatric Guide

Multnomah County, Clackamas County, Washington County
EMERGENCY MEDICAL SERVICES

PEDIATRIC GUIDE

Length-Based System

Measure from top of head to bottom of feet (inches)
If weight available, go directly to appropriate page

EDITION 8
January 2018

Special acknowledgement to Dr. Craig Warden, Dr. Mo Daya and Tualatin Valley Fire & Rescue for their original design and concept. Additional thanks to Dr. Jon Jui, the Multnomah County EMS office, American Medical Response and Portland Fire & Rescue for revisions and production.

3–4.9 lbs		1.5–2.4 kgs		16–17.5"	
VITAL SIGNS:		Heart Rate	Respirations	SBP	MAP
		140 bpm	40 – 60 min	50 – 60 mmHg	45 – 50 mmHg
INTUBATION		ET Size	ET Depth	Laryngoscope Blade	
		Cuffed 2.5 mm	7.5 – 9.0 cm	Straight 0	
I-GEL AIRWAY			KING AIRWAY	Color/Size	Inflation Volume
Pink		1.0		n/a	n/a
IO / NG / SUCTION		IO Needle	Suction Catheter		
		EZ-IO 25 mm (blue)	6 French		
DEFIBRILLATION		PEDIATRIC PADS	JOULES	SHOCK AT	
Defibrillation		✓	4 J/kg	8 Joules	
Cardioversion—First Shock/Subsequent Shocks		✓	4 J/kg	8 Joules	

♥ – CARDIAC MEDICATIONS – ♥

	DOSAGE	mcg/mg/g/mEq	cc
Amiodarone (VF/Pulseless VT)	5 mg/kg	10 mg	0.2 cc
Amiodarone-2nd Dose or VT w/pulses (IV)	2.5 mg/kg	5 mg	0.1 cc
Atropine	Contraindicated in neonates		
Epinephrine 1:10,000 (IV)	0.01 mg/kg	0.02 mg	0.2 cc
Lidocaine (IV)	1.5 mg/kg	3 mg	0.15 cc
Magnesium Sulfate (IV)	25 mg/kg, 1–2 min	50 mg	0.1 cc
Norepinephrine drip (MUST use IV pump)	0.1 mcg/kg/min	0.2 mcg/min	--

MEDICATIONS

	DOSAGE	mcg/mg/g/mEq	cc
Adenosine—First Dose (IV)	0.1 mg/kg	0.2 mg	0.07 cc
Adenosine—2nd/3rd Dose (IV)	0.2 mg/kg	0.4 mg	0.13 cc
Calcium Gluconate	0.5 cc/kg	--	1 cc
D10% (1 part D50 to 4 parts NS) (IV, PO)	5 mL/kg	1 grams	10 cc
Dexamethasone (IV, IM, PO)	0.6 mg/kg	1.2 mg	0.12 cc
Diphenhydramine (Benadryl) (IV, IM)	1 mg/kg	2 mg	0.04 cc
Epinephrine 1:1,000 (Anaphylaxis—IM)	0.01 mg/kg	0.02 mg	0.02 cc
Epinephrine 1:10,000 (Anaphylaxis—IV q 3-5 min. Total MAX 0.5 mg)	0.01 mg/kg	0.02 mg	0.2 cc
Fentanyl (IV, IN, and IM)	1 mcg/kg	2 mcg	0.04 cc
Fentanyl intervals: IV, IO, or IN: repeat q 3-5 min. IM: repeat q 15 min. MAX total for all routes 4 micrograms/kg.			
Fluid Challenge (IV)	10 cc/kg	--	20 cc
Glucagon (IM)	0.02 mg/kg	0.04 mg	0.04 cc
Naloxone (Narcan®)	Contraindicated in neonates		
Ondansetron (Zofran®) (IV, IM)	Contact OLMC (except if in c-spine or chemo) 0.1cc		
Sodium Bicarbonate (IV)	Contact OLMC	--	2 cc
Versed® (IV)	0.1 mg/kg	0.2 mg	0.04 cc
Versed® (IM, IN)	0.3 mg/kg	0.6 mg	0.12 cc

Doses have been rounded for ease of administration

Doses have been rounded for ease of administration

i-gel Sizes

iGel

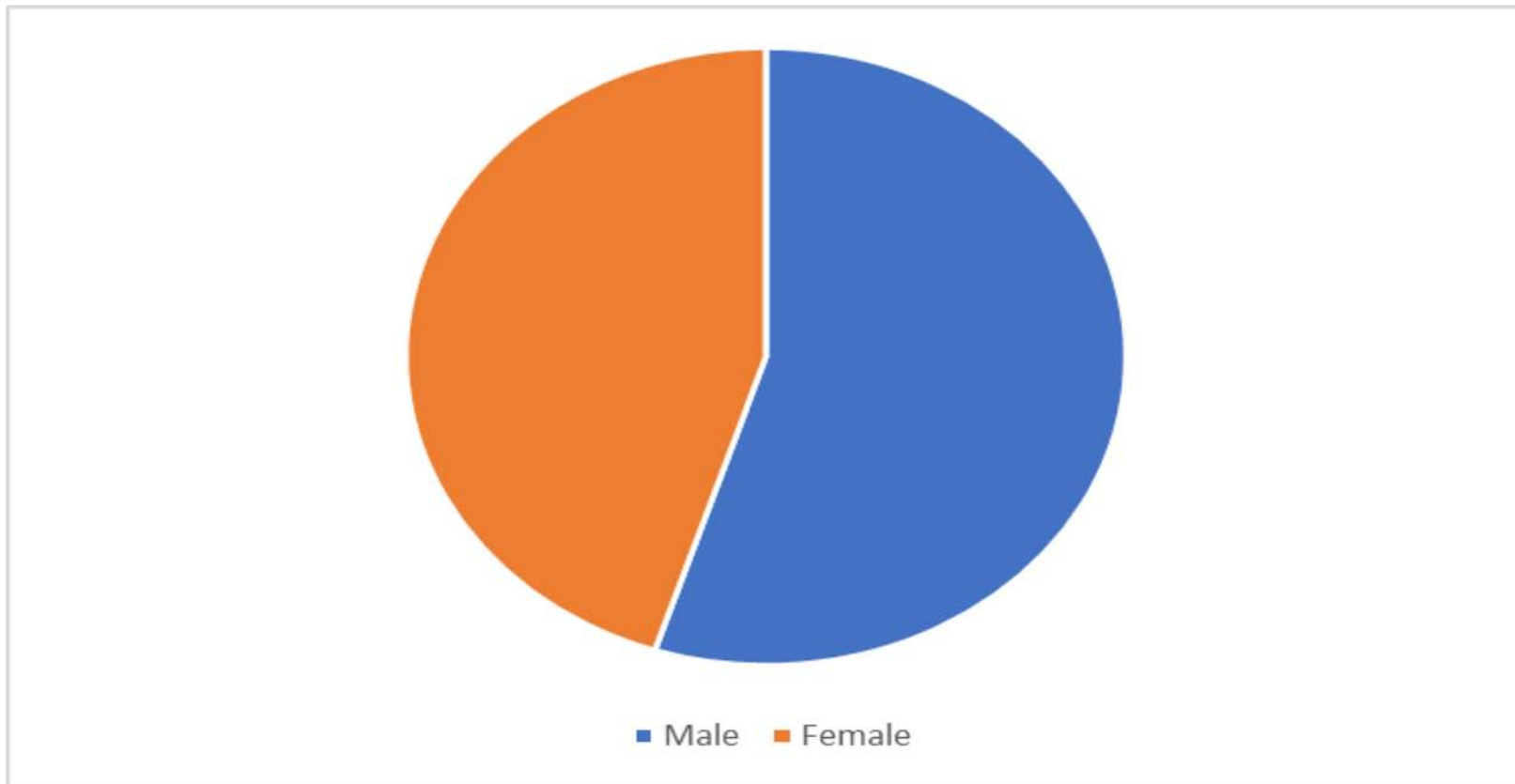


i-gel size	Patient size	Patient weight guidance (kg)
1	Neonate	2-5
1.5	Infant	5-12
2	Small paediatric	10-25
2.5	Large paediatric	25-35
3	Small adult	30-60
4	Medium adult	50-90
5	Large adult+	90+

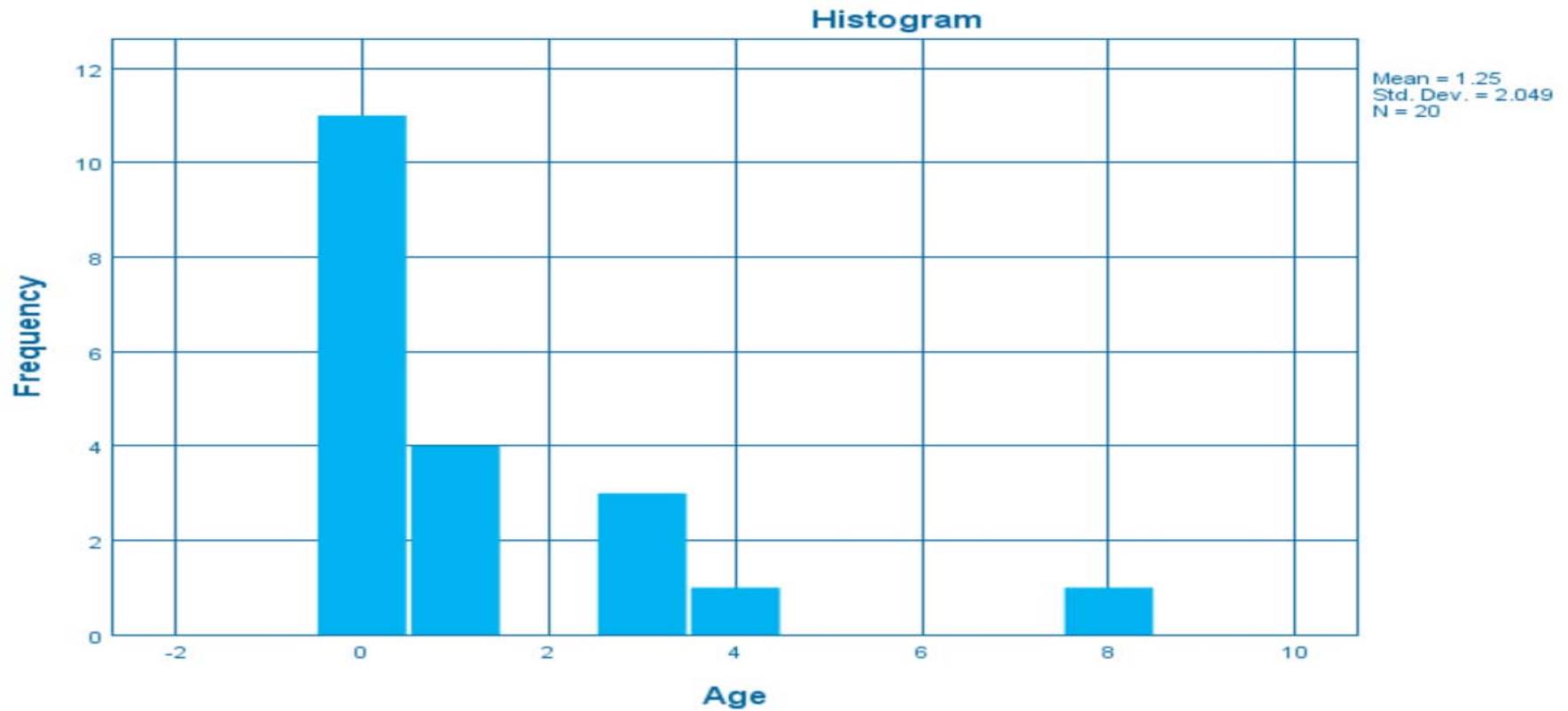
MCEMS IGEL Experience

- Dates: January 1, 2015 to December 31, 2018
- Pediatrics : **Age 12 year** or less
- Data Source: AMR MEDS
- I-gel as primary or secondary device
- Success Definition
 - **End Tidal CO2 must be present** and consistent
 - If ETCO2 not document, hospital records reviewed

Results : N= 20 Patients Sex



MCEMS Pediatric IGEL : Age



MCEMS Pediatric IGEL : Success

	Number	Percent
Successful	17	85%
Unsuccessful	3	15%
Total	20	100%

MCEMS Pediatric IGEL Success by Age

	Successful	Unsuccessful	Total
Less than 1 year	10	1	11
1	4		4
3	2	1	3
4	1		1
8		1	1
Total	17	3	20

Conclusions

- Pediatric IGEL is a viable alternative as both primary airway and rescue device
- Success rate in pediatrics is comparable to the success rate in the adult population
- We did not observe complications in this small cohort from the IGEL device.

Conclusions : Lessons Learned

- EMS provider **familiarity and “comfort”** with the device is critical for successful deployment; specifically, we deployed the IGEL in both Adults and Pediatrics
- “System competency” has taken approximately 2-3 years

Conclusions : Lessons Learned

- Pediatric Airway Training is mandatory at a minimum of **annually**
- PALS every two years is **insufficient** to maintain competency in pediatric emergencies

Conclusions : Lessons Learned

- Failure to place the IGEL device can be attributed to :
 - 1. **Improper technique** of placement (i.e. tongue prevents adequate placement)
 - 2. **Improper size**
 - 3. Inadequate mouth opening

The END

Questions?