

# Kansas EMS – A Look into Intubation and Other Advanced Airway Devices

FEBRUARY 6, 2020 – KBEMS PLANNING  
AND OPERATIONS COMMITTEE



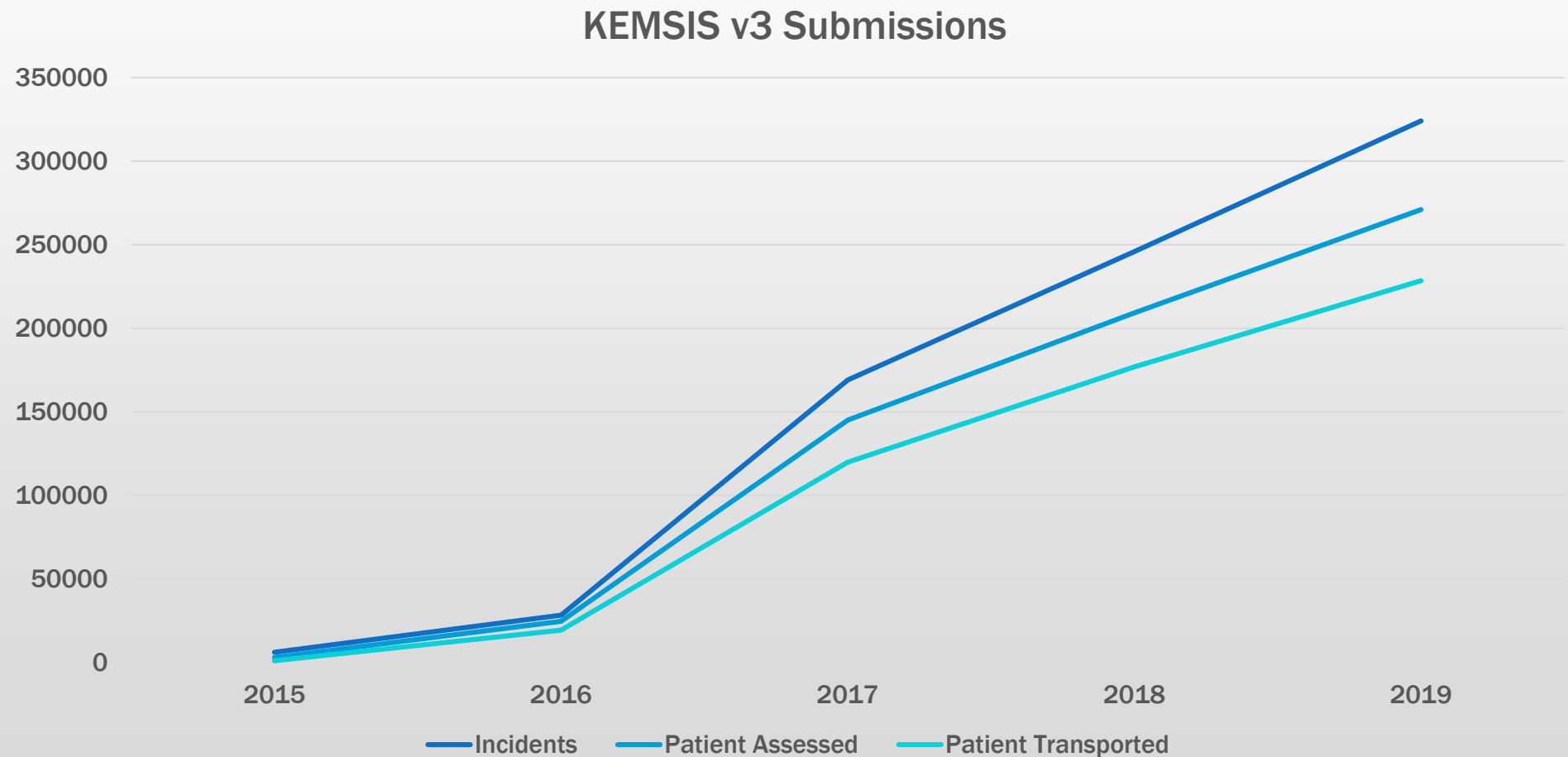
# Disclaimer(s)

- Data shown is as reported into the v3 Kansas EMS Information System (KEMSIS) as of January 30, 2020 at 1430 CST.
- No ambulance service, EMS provider, or patient can be identified from the information being provided.
- Information shown represents data from all 105 counties in Kansas and only represents calls that originate or terminate within the state of Kansas, but is not representative of 100% of the call volume within the state.

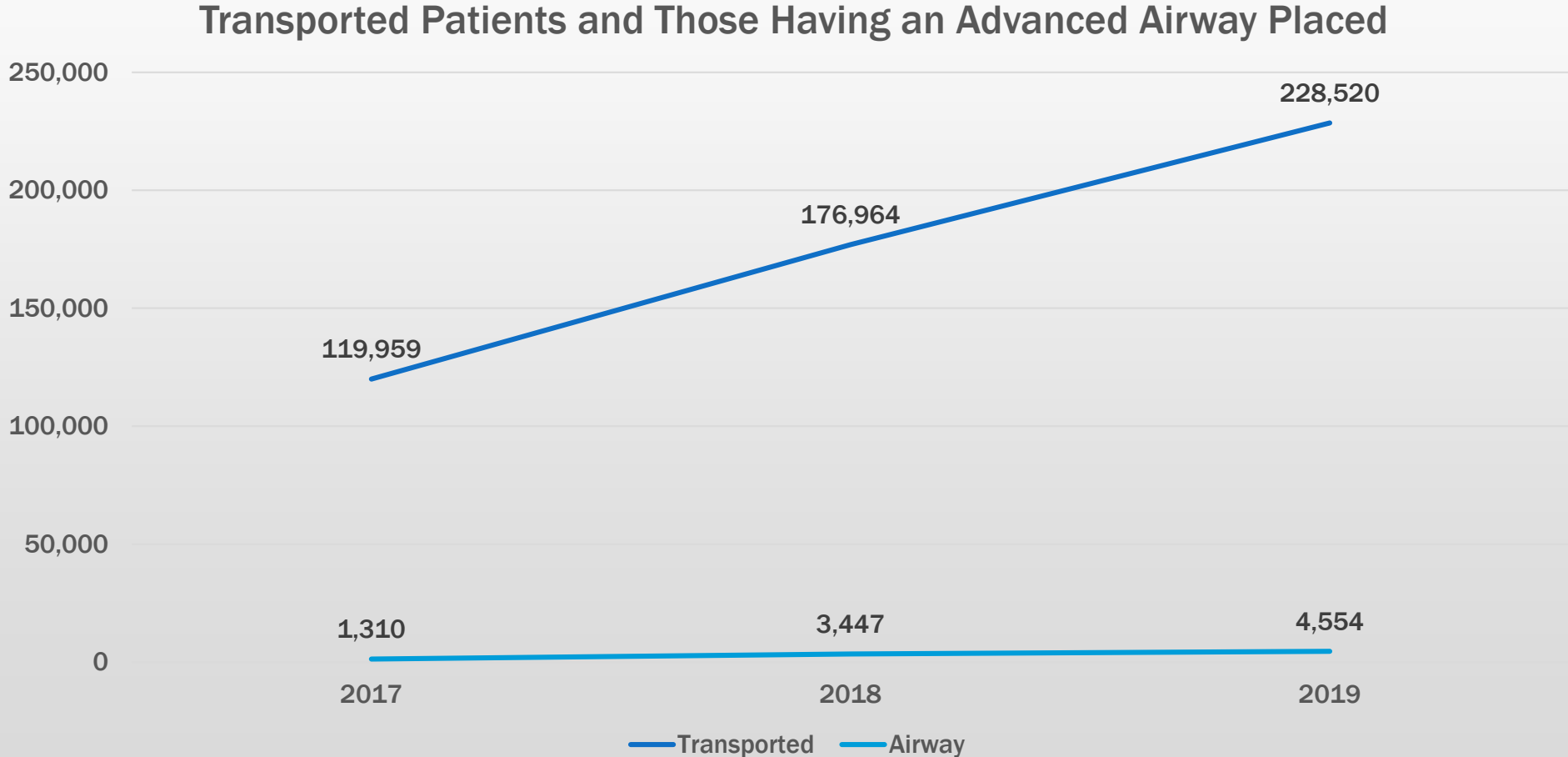
# Policy Group Questions

- What are the circumstances when a patient is intubated or advanced airway placement?
- Rapid Sequence Intubation – how often is it being done, rate of success, and common medications given?
- Are there differences between intubations performed by air ambulance services and ground ambulance services?
- Are there protocol changes that effect the circumstances involved when a patient is intubated or an advanced airway is placed?
- Are there protocol changes that effect the rate/reason for RSI / MAI?
- What obstacles exist with advanced airway placement?
- Does EMS data reflect differences with basic airway device placement?

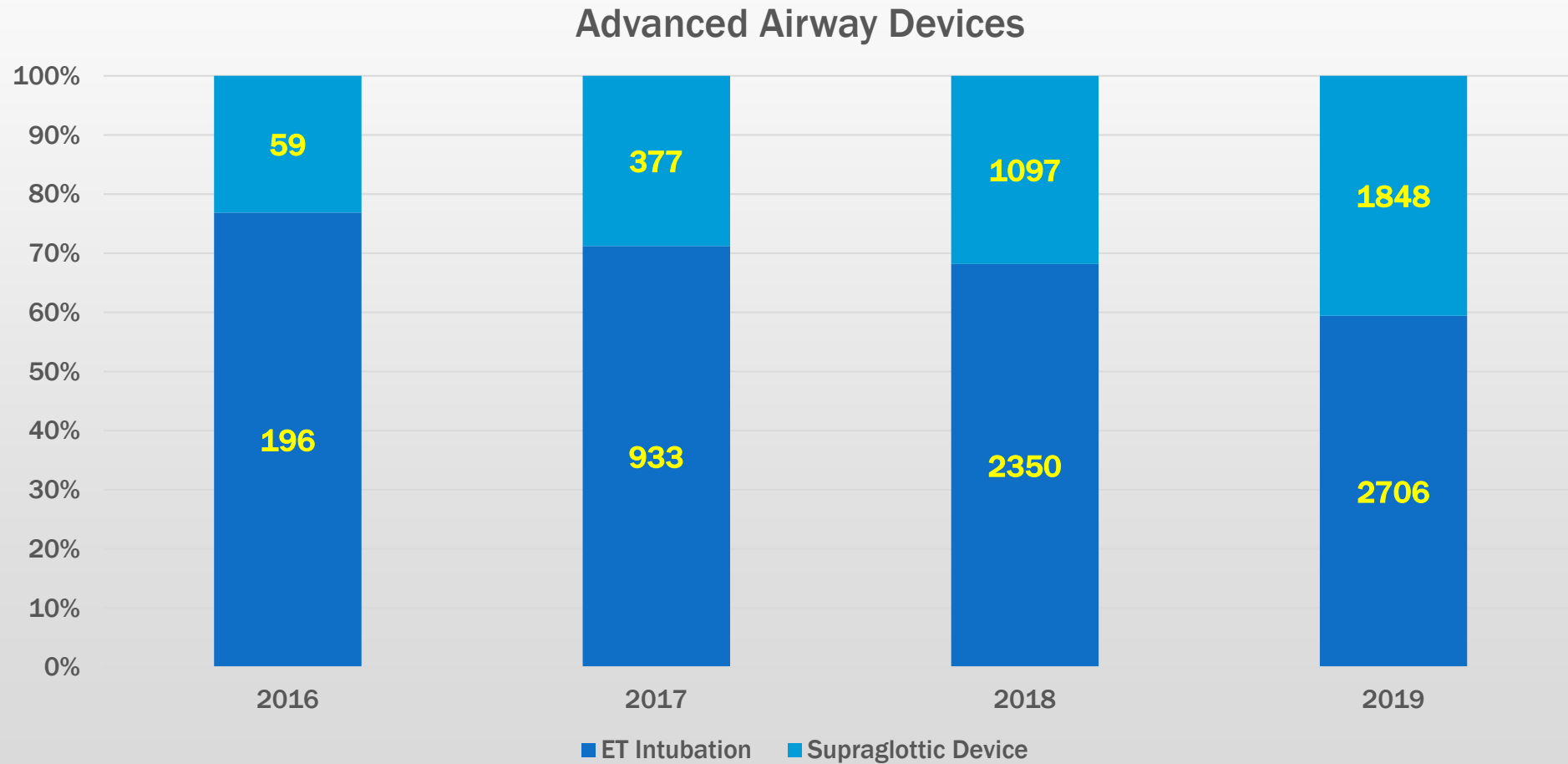
# Baseline Data Submission



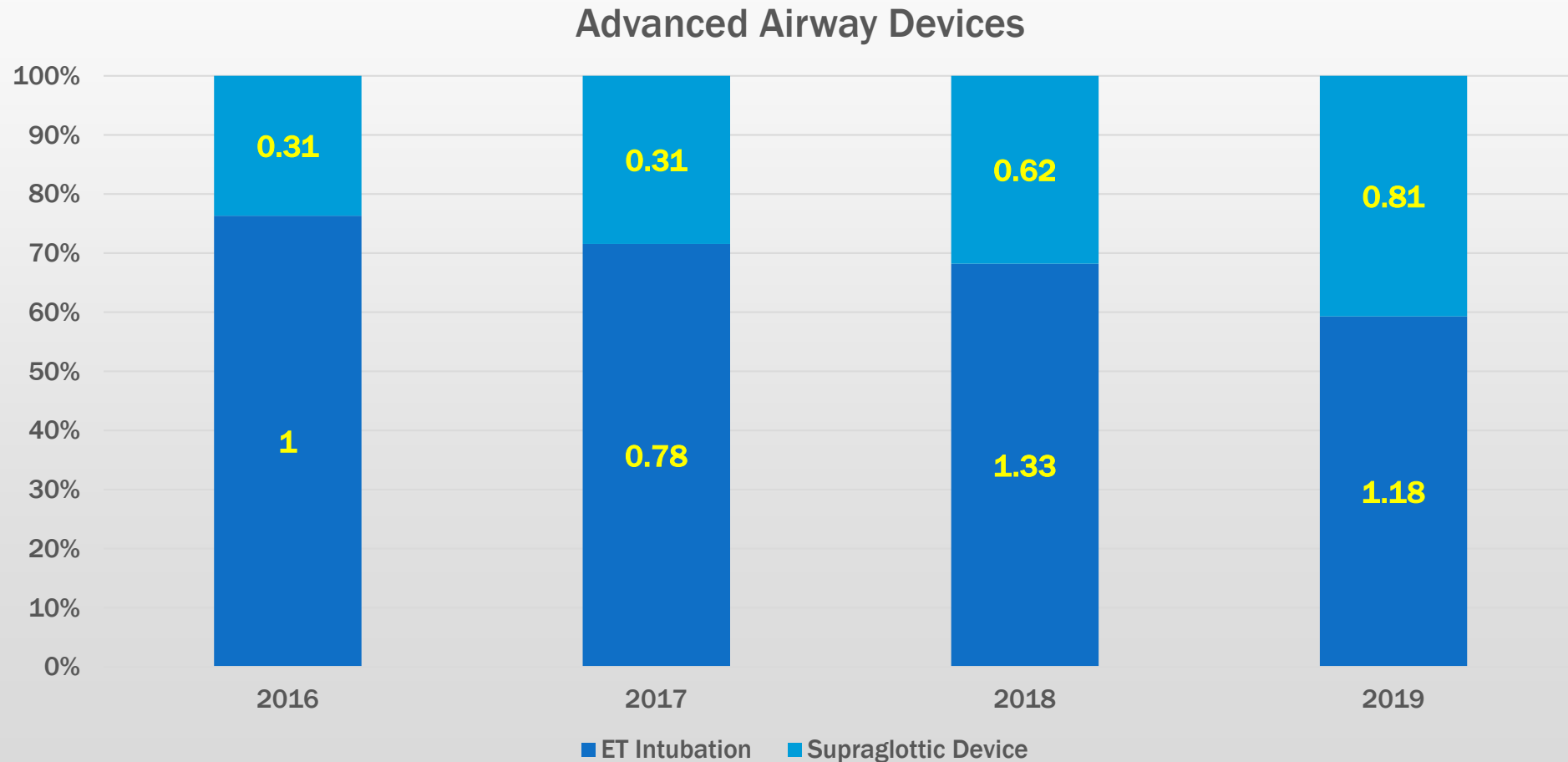
# How often is an advanced airway procedure performed?



# Frequency – How Many?



# Frequency – How Often?



# Endotracheal Intubations



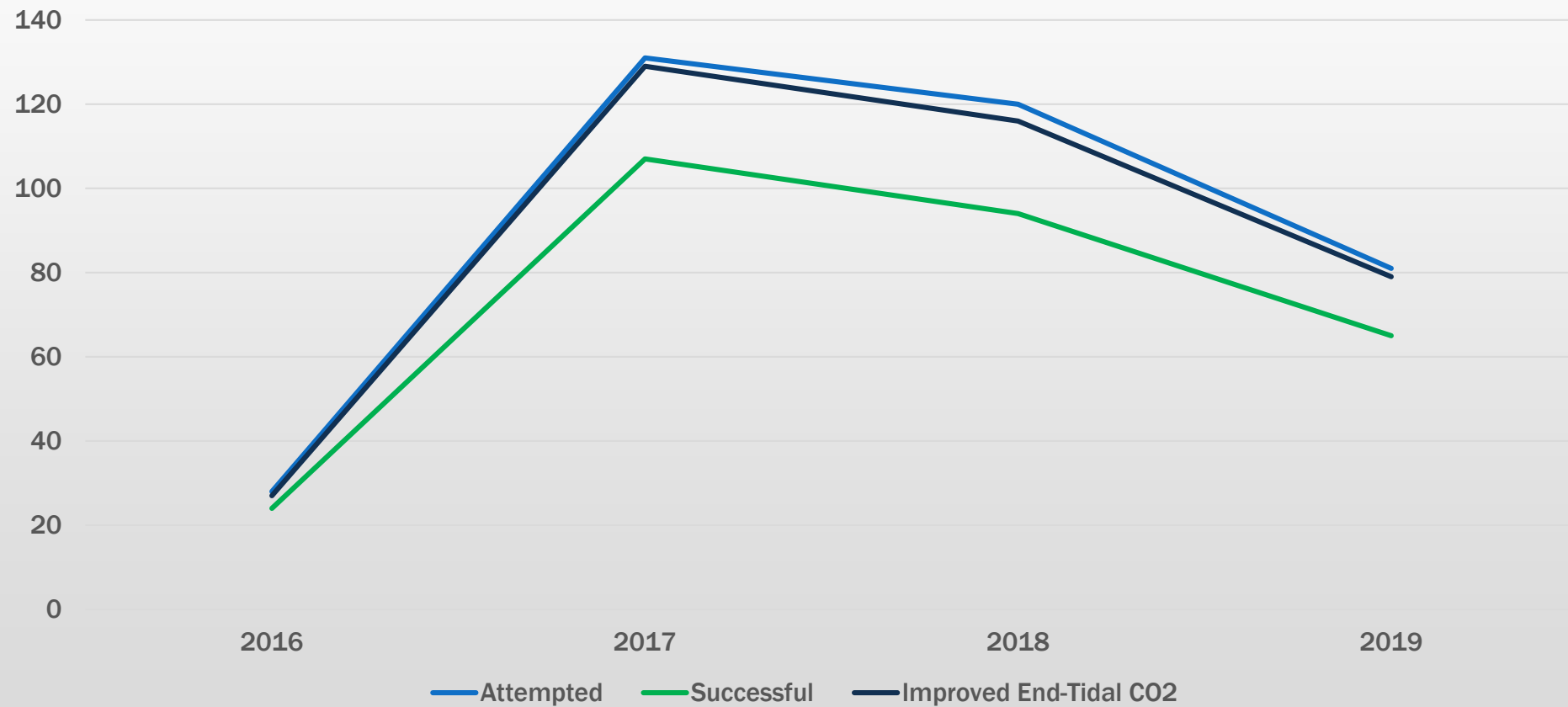
# Endotracheal Intubations

- **Standard Laryngoscopy**
- **Video Laryngoscopy**
- **Rapid Sequence Induction / Medication Assisted Intubation**
  - Better known as RSI or MAI

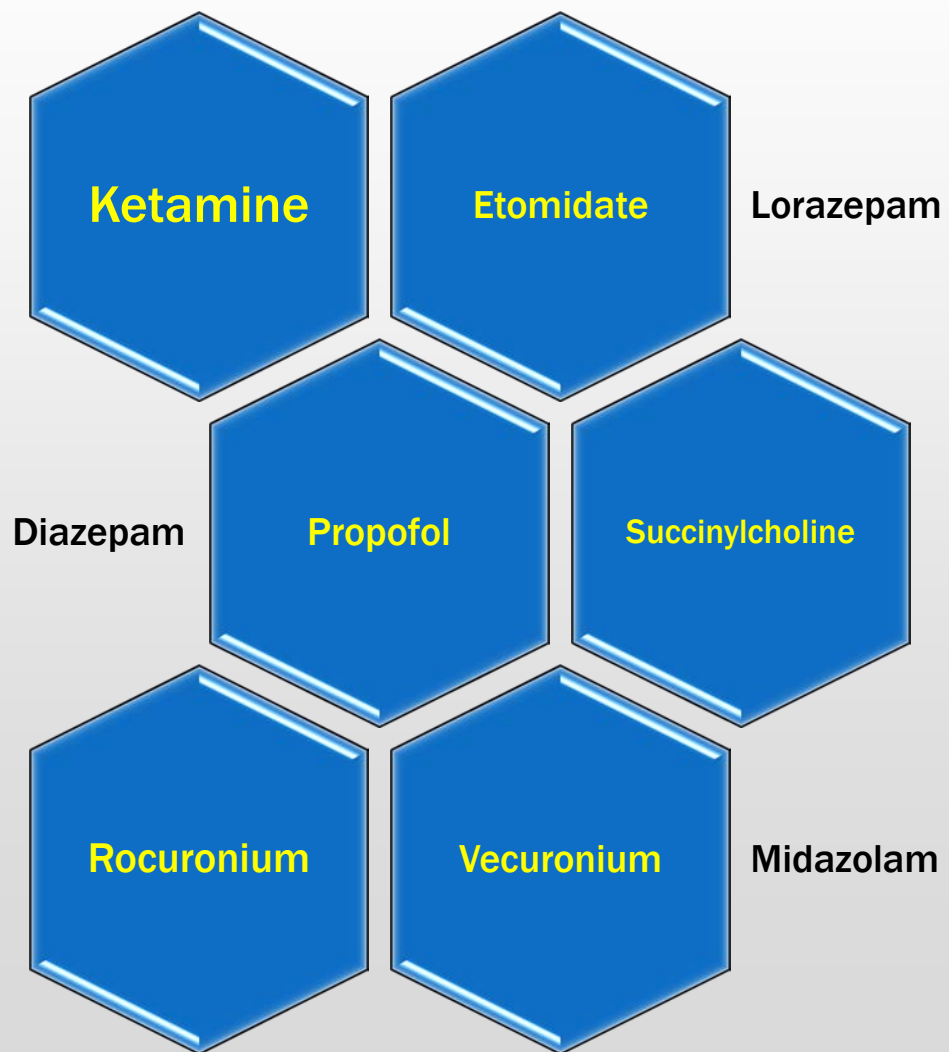
Type	2019
Standard	86.1%
Video	13.9%
RSI / MAI	5.0%

# RSI / MAI

RSI / MAI (performed by EMS)



# Medications Used for RSI / MAI (2016-2019)



# Supraglottic Devices

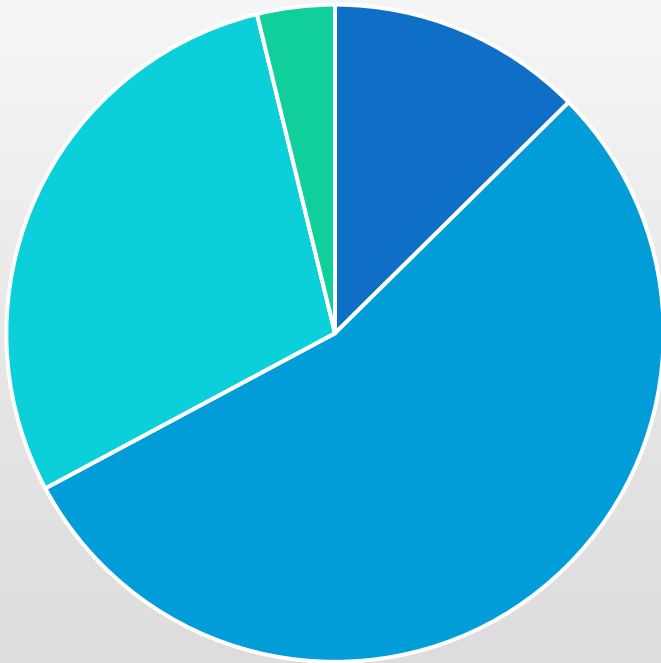
# Supraglottic Devices

- **Double Lumen**
  - Endotracheal Combitube (ETC)
  - Esophageal Obturator Airway (EOA)
  - Pharyngotracheal Lumen Airway (PtL)
- **Single Lumen**
  - Laryngeal Mask Airway (LMA)
  - King LT Airway
  - I-Gel

	Double Lumen	Single Lumen
2017	30.5%	69.5%
2018	24.9%	75.1%
2019	20.9%	79.1%

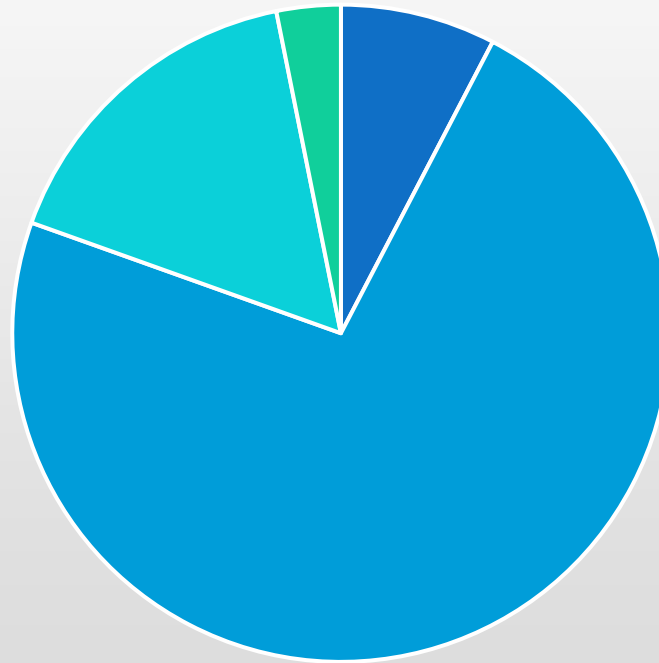
# Single Lumen Devices (2017-2019)

2017



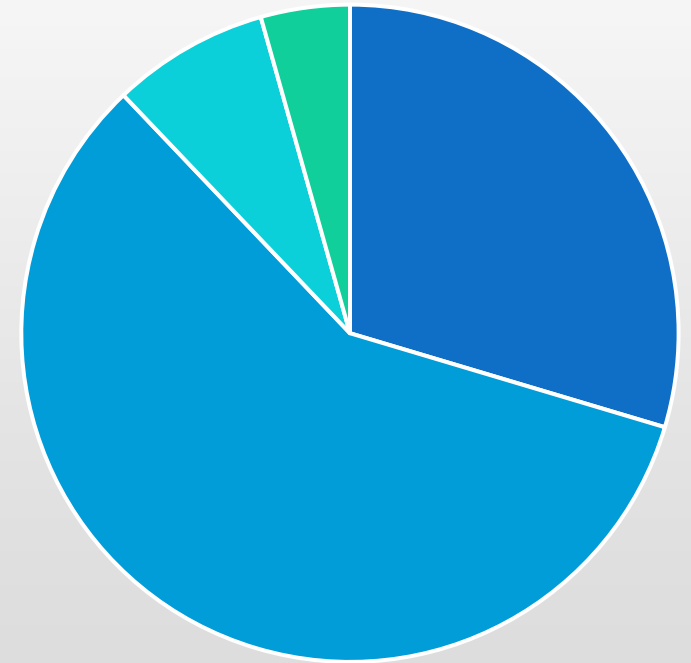
■ LMA ■ King ■ I-Gel ■ Other

2018



■ LMA ■ King ■ I-Gel ■ Other

2019



■ LMA ■ King ■ I-Gel ■ Other

**When are we using?**

# Top 5 Primary Impressions - 2016

## Endotracheal Intubation

- Cardiac Arrest (124) – 63.3%
- Altered Mental Status (14)
- Injury of Head (8)
- Respiratory Failure (6)
- Respiratory Distress (5)

## RSI / MAI

- Altered Mental Status (7) – 25.0%

## Double Lumen Airway

- Cardiac Arrest (47) – 83.9%



# Top 5 Primary Impressions - 2017

## Endotracheal Intubation

- Cardiac Arrest (459) – 49.2%
- Altered Mental Status (46)
- Injury of Head (33)
- Respiratory Failure (30)
- Injury, unspecified (26)

## RSI / MAI

- Altered Mental Status (19) – 14.5%
- Injury, unspecified (15)
- Respiratory Distress (14)
- Injury of Head (6)
- Stroke (6)

## Double Lumen Airway

- Cardiac Arrest (93) – 80.9%

## Single Lumen Airway

- Cardiac Arrest (176) – 67.2%
- Respiratory Distress (8)
- Injury of Head (8)
- Syncope (6)

# Top 5 Primary Impressions - 2018

## Endotracheal Intubation

- Cardiac Arrest (634) – 27.0%
- Altered Mental Status (124)
- Not Applicable (79)
- Angina (77)
- Injury of Head (70)

## RSI / MAI

- Altered Mental Status (20) – 16.7%
- Respiratory Failure (11)
- Injury of Head (10)
- Injury, unspecified (8)
- Stroke (7)

## Double Lumen Airway

- Cardiac Arrest (225) – 82.4%
- Respiratory Failure (8)
- Injury, unspecified (6)

## Single Lumen Airway

- Cardiac Arrest (255) – 30.9%
- Weakness (35)
- Altered Mental Status (33)
- Chest pain, non-cardiac (26)
- Respiratory Distress (22)

# Top 5 Primary Impressions - 2019

## Endotracheal Intubation

- Cardiac Arrest (777) – 28.7%
- Altered Mental Status (157)
- Respiratory Failure (95)
- Injury, unspecified (95)
- Stroke (89)

## RSI / MAI

- Cardiac Arrest (10) – 12.3%
- Respiratory Distress (8)
- Altered Mental Status (7)
- Stroke (6)
- Intracranial injury (6)

## Double Lumen Airway

- Cardiac Arrest (312) – 80.8%
- Injury, unspecified (8)
- Respiratory Failure (7)
- Syncope (7)
- Injury of Head (7)

## Single Lumen Airway

- Cardiac Arrest (612) – 41.9%
- Altered Mental Status (70)
- Weakness (56)
- Respiratory Distress (41)
- Acute Pain (37)