**AIRWAY**

- **BSI/PPE**
  - Gloves
  - Goggles
  - Mask

- **Airway Opening**
  - Head tilt & Chin lift maneuver (modified jaw thrust PRN)
  - Suction mouth w/ rigid Yankaur tip PRN
  - Size OPA: front of teeth to angle of jaw
  - Use tongue blade to depress tongue and insert
  - Size NPA: tip of nose to earlobe
  - Lubricate well and insert (straight down) along floor of nostril
  - Size & insert oral (OP) or nasal (NP) airway
  - Consider use of OPA and bilateral NPA
  - Apply mask over nose and mouth (without occluding nostrils)
  - Maintain mask face seal w/ thumb & index finger
  - Maintain open airway by lifting chin w/ middle, ring & 5th finger

- **Confirmation & Securing**
  - ET tube holder (place under pts neck)
  - Stethoscope (put around your neck)
  - Capnography (already attached to BVM)
  - PRN: External laryngeal manipulation (ELM) of thyroid cartilage
  - PRN: (R) sided cheek/lip retraction - request assistant to perform
  - Assistant to monitor pts
  - (1) HR, (2) ECG, (3) O2 sat, (4) elapsed time during procedure

- **Head injury / c-collar or lat head immobilizer**
  - ETT holder (place under pts neck)

- **Assess for difficult intubation**
  - Pre-oxygenate for 3 min - with capnography sensor on BVM
  - Squeeze bag over 1 sec, just to see chest rise (~400-600 mL)
  - Avoid high pressure (opens esophagus-causes gastric distention)
  - Avoid hyperventilation (rate, volume, or pressure)
  - Confirm BVM connected to oxygen @ 15 LPM
  - Attach to ECG monitor
  - Obtain O$_2$ saturation reading ASAP (if pulse present)

**BREATHEING**

- Ventilate at 10/min (1 every 6 sec)
- Asthma/COPD ventilate @ 6-8/min
- Avoid hyperventilation (rate, volume, or pressure)

- Confirm BVM connected to oxygen @ 15 LPM
- Attach to ECG monitor
- Obtain $O_2$ saturation reading ASAP (if pulse present)

**PREP**

- Assess for difficult intubation
- Have everything ready BEFORE placing blade in pts mouth

**Equipment**

- Suction: connect Yankeur, turn on to ✔
- Alternative airway: King LTSD airway in sight

**Laryngoscope**

- Attach blade to handle
- Check light source (bright & tight)
- ET tube
  - Choose correct size ETT (women 7-8, men 8-9)
  - Insert & shape stylet
  - Check cuff (while in pkg) & leave syringe attached
  - Apply lubricant

**Confirmation & Securing**

- EDD
- Capnography (already attached to BVM)
- Stethoscope (put around your neck)
- ETT holder (place under pts neck)
- c-collar or lat head immobilizer

- Medications PRN
  - Head injury / ICP: Lidocaine – per SOP
  - Pain: Fentanyl - per SOP
  - Drug-Assisted
    - Midazolam – per SOP
    - Etomidate – per SOP
    - Benzocaine – whenever midazolam/etomidate used, unless Cl

**INTUBATE**

- Place head in sniffing position, unless contraindicated
  - (head extended, neck flexed – earlobe horizontal w/ sternum)
- Pad ~8-10 cm (4") under occipital/head, unless contraindicated
- Remove ETT from pkg and hold in (R) hand
  - (so don’t have to look away to pick up tube when cords visualized)
  - Open mouth w/ cross-finger technique

- PRN: External laryngeal manipulation (ELM) of thyroid cartilage
  - PRN: (R) sided cheek/lip retraction - request assistant to perform
  - Assistant to monitor pts
  - (1) HR, (2) ECG, (3) O2 sat, (4) elapsed time during procedure

- Insert curved blade from (R) side of mouth, sweep tongue to (L)
  - NOTE: Every insertion of blade into pts mouth is considered an "intubation attempt" Limit/maximum 2 attempts per patient

- Lift upward and forward (without tilting blade backward on teeth)
  - Curved blade inserted into vallecula; straight blade lifts epiglottis
  - Visualize vocal cords (anterior to/above posterior cartilage)
  - Pass tube from (R) side of mouth through vocal cords
  - Pass tube until cuff disappears beyond vocal cords
  - Not straight down blade

- If not passed within 30 sec of apnea:
  - (1) Remove ETT & Re-oxygenate X 30 sec
  - (2) Consider change: PT position, Blade, Meds, King LT

- If not passed 2nd attempt: reoxygenate x 30 sec & use King LT
  - NOTE: Do NOT need 2 unsuccessful ETI attempts to use King LT airway (e.g., unable to visualize cords, poor pt access)
  - Pass tube until cuff disappears beyond vocal cords
  - ~19-23 cm @ front teeth/gums (ETT size X 3)
  - While holding ETT in place
  - remove laryngoscope blade from mouth and stylet from ETT

**CONFIRM**

- Attach EDD and aspirate for - ease of air return
  - If EDD resistance: attempt direct visualization ETI thru vocal cords
  - Attach bag-valve device w/ capnography to ETT
  - Ventilate and auscultate (1st) over stomach for – absence of gastric sounds (listen to gastric before lung sounds)
  - Ventilate and auscultate (R), then (L), mid-axillary line and anterior (L) & (R) chest for - equal breath sounds
  - If absent: Remove ETT & Re-oxygenate for 30 sec prior to re-attempting ETI
  - If difficulty hearing / confirming breath sounds: consider inflating cuff to minimize air leak and listen
  - Note ETCO$_2$ number & waveform
  - Ventilate at 10/min (1 every 6 sec); unless asthma/COPD (ventilate @ 6-8/min)
  - Avoid hyperventilation (rate & depth), squeeze bag over 1 sec, watch for chest expansion

**SECURE**

- Inflate ETT cuff with ~4-10mL air (until no air leak heard)
- Remove syringe
- Note ETT depth cm @ front teeth/gums
- Secure ETT in place w/ tube holder
- Latera l head immobilization - apply (c-collar or lat head immob)
- Insert OP airway as bite block - PRN
- Suction ETT w/ soft suction catheter - PRN

**REASSESS**

- Frequently to detect displacement and complications (esp after pt mvmnt or pt status/condition changes)
  - $EtCO_2$
  - $O_2$ sat
  - BP
  - HR
  - Lung sounds

DIANA:eti-form-11-13
Procedure Endotracheal Intubation (ETI) – Bougie Assisted

**Introduction**
- This procedure is to supplement, not replace, the ETI procedure
- Refer to ETI procedure for additional details
- Compared to ET tube (ETT), the boogie’s narrow diameter (~5 mm) allows improved visualization, and curved upward tip facilitates easier passage into glottic opening

**Indications**
- Anticipated difficult ETI, may be used for first attempt
- Inability to visualize vocal cords or second intubation attempt
- Requires visualization of either epiglottis (minimum) or posterior cartilage (preferable)

**Contraindication**
Inability to visualize either epiglottis or posterior cartilage

**Caution**
Laryngeal or tracheal injury – can exacerbate trauma

**Equipment**
- “Bougie” also known as “endotracheal tube introducer,” “eschmann stylet,” “gum-elastic bougie”
  - Disposable, single-use, flexible with shape retention
  - Size: 15 Fr, 60-70 cm, coude tip (coude = curved)
- ETT: avoid too large of tube, gap between bougie and ETT can hinder advancement

**Procedure**
1. Prepare patient and equipment per standard ETI procedure
2. Remove bougie from package
   a. Note markings and orientation of upturned coude tip
3. Grip bougie like pencil w/ curved tip facing upward in right hand (laryngoscope in left hand)
   a. Caution: Minor rotation of bougie can significantly change orientation and location of tip and prevent placement and confirming clicking sensation (described below)
4. Visualization & Insertion
   a. Insert gently; avoid forceful insertion - can cause tracheal trauma/perforation
5. Confirmation
   a. Clicking/vibration sensation felt (60-95% cases) when bougie tip rubs against tracheal rings; note – to be felt, tip must be directed anteriorly
   b. Bougie will stop advancing and resistance (“hold-up”) will be felt 25-40 cm at teeth because of distal airway narrowing
   c. If inserted into esophagus - no clicking/vibration is felt and tip easily advances well beyond 40 cm
6. Intubator maintains view with laryngoscope and firm hold onto bougie
   a. Maintain bougie 25 cm @ teeth
   b. Keep laryngoscope in place to allow ETT to pass under tongue
7. Assistant advances ETT (with lubricated tip) into proper position
   a. With bougie tip placed in trachea, assistant places ETT over bougie and advances ETT
   b. As ETT reaches intubators fingers, assistant takes over hold on bougie while intubator continues advancing ETT toward glottic opening
   c. Counter-clockwise rotation of ETT facilitates insertion through vocal cords into larynx
8. Once ETT cuff passes beyond vocal cords, while firmly holding ETT in place, carefully remove bougie
9. Confirm, secure and reassess per ETI procedure