

PROTECTED COVID-19 INTUBATION

PREPARE TEAM

1 MD + 1 RN +/- 1 Extra RN
in designated room
in full PPE (N95 mask, double gloves)

2nd MD + 2nd RN
on stand-by outside room
in full PPE

Runner/Safety Officer
monitors PPE don/doffing

CALL LAB + XRAY

SLOW DOWN

**SHOULD YOU INTUBATE?
CODE STATUS? PROGNOSIS?**

Full PPE for all who will/may enter designated room, wear Voceras
Assign roles: Intubation (2), IV start, Runner, call to PTN/Family
Review PLAN A, B and C with team
Equipment packs checked and ready (see page 2)
Intubation drugs drawn up and labeled (see page 2)

PREPARE PATIENT

While getting ready, apply NRM
@15L/min over top surgical mask

AGITATED PATIENT?

DELAYED SEQUENCE INTUBATION

Ketamine 1mg/Kg
(+ 0.5mg/Kg prn)

POSITION

Head & torso elevated,
Auditory meatus at sternal notch
Dentures? **IN** for preOX, **OUT** for intubation

CIRCULATION

Judicious use of fluids
Start pressors early
Push-Dose Epi and
NOREPI drip ready (+/- IO)

PRE-OXYGENATION

Put N/P on, then NIPPV mask
attached to Filter
+ CO2 detector (+/- flex mount)
+ BVM @ 15L/min, PEEP 10
+ N/P @ 5L/min

DO NOT BAG!!!!

VERBALIZE PLAN A - B - C

PLAN A

(When ready, turn off N/P)
Video-Laryngoscope
+ Bougie

Apneic CPAP, FMV
or SGD

1 min. MAX

PLAN B

MD preference
or skip to Plan C

Apneic CPAP, FMV
or SGD

1 min. MAX

PLAN C

SGD + call for help
+/- prepare for
Surgical Airway

RE-OXYGENATE with Apneic CPAP, gentle FMV or SGD – if fails, GO SURGICAL!

Apneic CPAP = N/P 5L/min + BVM 15L/min + PEEP 10 with Filter + waveform CO2 detector – DO NOT BAG!

FMV = gentle 2-person Face Mask Ventilation (10 slow breaths, 1 per 6 sec), **SGD** = Supraglottic Device

INDUCTION

Ketamine 1.5mg/Kg
(if hypotensive)
OR
Propofol 1.5mg/Kg
(if hypertensive)

1 min.

PARALYSIS

Rocuronium
1.5mg/kg

Wait long enough!

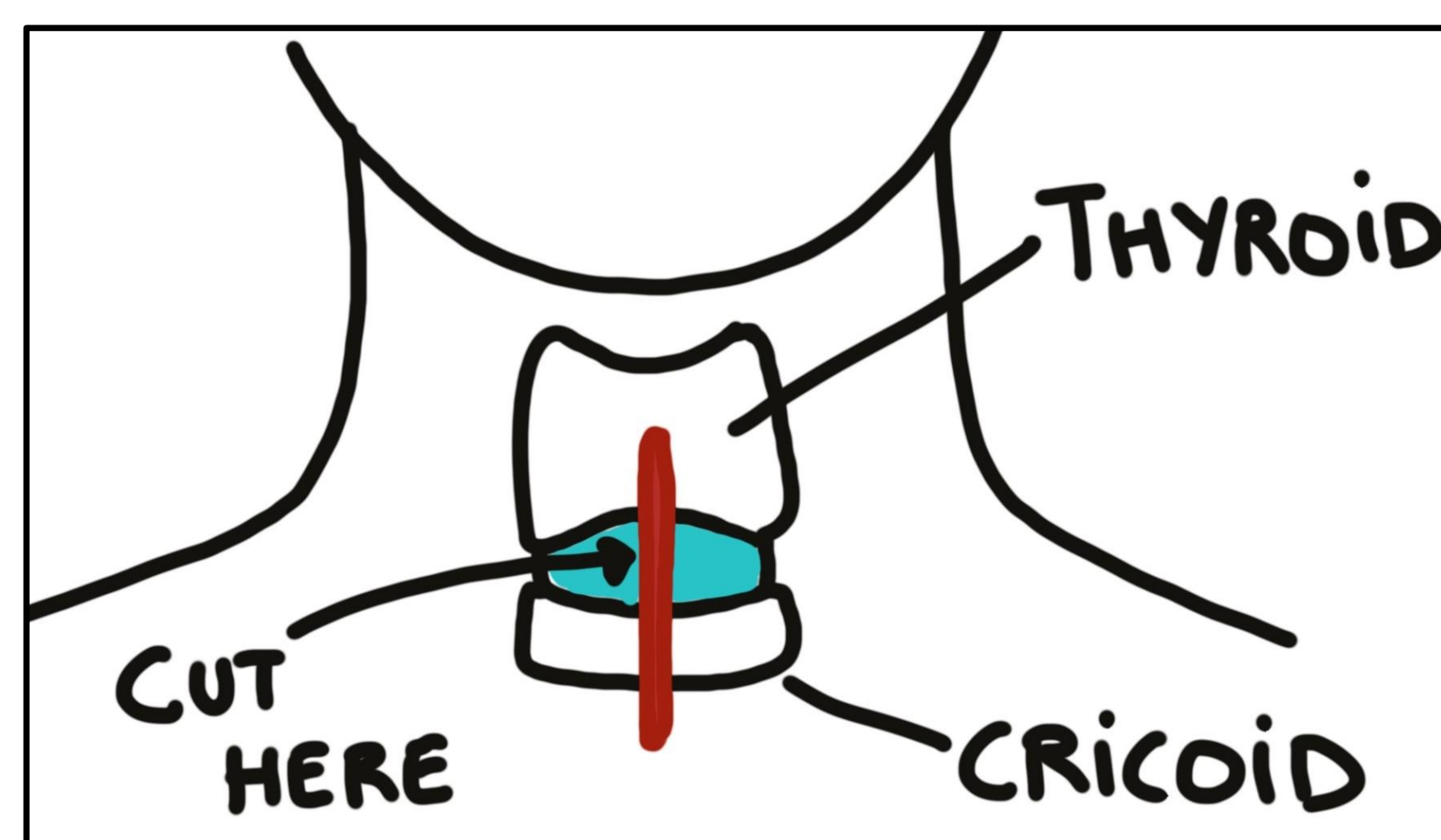
45 sec.

INTUBATION

Do not auscultate!
Confirm with ETCO2
Clamp ETT to connect to
ventilator
Cover face with mask if SGD/Cric

SURGICAL AIRWAY

scalpel ~ finger ~ bougie



1. Make generous **VERTICAL** cut, as depicted
2. **Feel** for cricothyroid membrane
3. Make **HORIZONTAL** cut through the membrane
4. **Feel** for tracheal lumen, **insert Bougie**
5. Insert **6-0 cuffed ET tube** over Bougie
6. Remove Bougie, inflate cuff, **cover face w/ mask**
7. Bag to **confirm** position, secure ET tube

EQUIPMENT CHECKLIST

ALREADY IN ROOM:

- Dual O2 Source
- Monitor leads
- O2 sat probe
- BP Cuff
- Defib pads
- CO2 monitor attachment
- Suction equipment, connected
- Blankets and towels (to help position patient)

IV ACCESS KIT

- Small dedicated tray
- Basic IV equipment
- IO kit

DRUG KIT (see below)

- Intubation Drug Kit (drawn + labeled, placed in a basin)
- Infusions (use push doses until infusion ready)

PRE and RE-OXYGENATION KIT

- Nasal prongs
- Sized NIPPV mask and BVM mask
- Filter & CO2 detector
- Flex mount (to prevent torque on mask)
- BVM + PEEP
- OPA sizes 7 + 8 (for apneic CPAP)
- Supra-Glottic Device (e.g.: King Airway, LMA, iGel)

INTUBATION KIT

- Video – Laryngoscope, tested
- Direct Laryngoscope
- 10 mL syringe and stylet for ETT
- ETT (7.5 and 8.0; test the cuffs & use alcohol swab to wipe down + secure ETT connector)
- Bougie #1
- ETT Securing device/tape
- Filter & CO2 detector (already in Pre-Ox Kit)
- Ventilator outside room, connected to ET suction
- Clamp for ETT, in case needs disconnecting

SURGICAL AIRWAY KIT

- #10 scalpel
- Bougie #2
- 5.5 and 6.0 ETT + 10mL Syringe

INTUBATION DRUG KIT

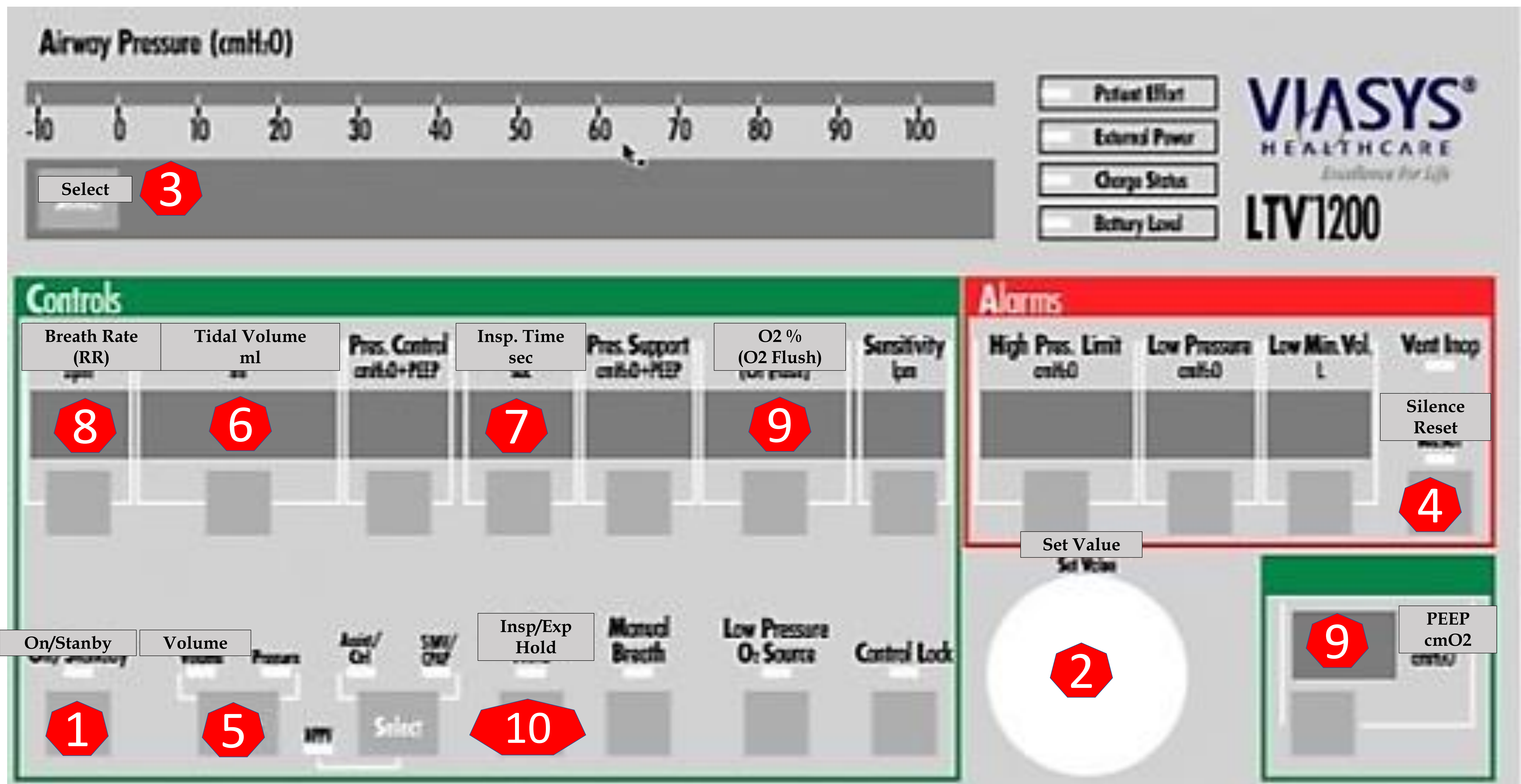
Draw up **red** ones first!

Ketamine	10mg/mL	200mg = 20mL (can be used for DSI as well)
Propofol	10mg/mL	200mg = 20mL
Rocuronium	10mg/mL	150mg = 15mL (kept in fridge)
Push Dose Epi	10 mcg/mL	1mL Cardiac Epi 1:10000 + 9mL NS = 10mL
Fentanyl	50mcg/mL	200mcg = 4 mL
Midazolam	5mg/mL	20mg = 4 mL

INFUSIONS: Pressors & Post-intubation sedation

Norepinephrine	16mcg/mL	Start with 0.1 mcg/kg/min, titrate by 1mcg/min q5min
Propofol	10mg/mL	20-40 mcg/kg/min
Ketamine	10mg/mL	1mg/kg/hr
Fentanyl	50mcg/mL	50mcg/hr

LTV 1200 VENTILATOR BASIC SET-UP



- 1 Press and hold "On/Standby" until lights turn on
- 2 Turn selection dial until "NEW PATIENT" is displayed at the top of the panel
- 3 Press "Select" to the left of screen; turn dial until "ADULT" is displayed, press "Select" again
- 4 To silence alarm, press "Silence Reset" (repeat as needed)

INITIAL SETTINGS for LUNG PROTECTIVE VENTILATION

5	Ventilator Mode	VOLUME
6	Tidal Volume = PROTECTION	6 mL/Kg (IBW)
7	Inspiratory Time = COMFORT	< 0.5 sec
8	Respiratory Rate = VENTILATION	16
9	FiO ₂ /PEEP (goal = 88-95% O ₂ Sat.)	START 1.0/5 , then titrate 0.3/5 - 0.4/5 - 0.4/8 - 0.5/8 - 0.5/10 - 0.6/10 - 0.7/10 - 0.7/12 - 0.7/14 - 0.8/14 - 0.9/16 - 0.9/18 - 1.0/18-24
10	Plateau Pressure	Adjust tidal volume by 1 mL/Kg increments to keep plateau pressure < 30

NB: to change a numerical value, press its respective button, turn selection dial, then press the button again

POST-INTUBATION CHECKLIST

ET Tube depth	21 cm for women, 23 cm for men, 3 x ET tube size in kids
ET cuff pressure	INFLATE before bagging, AVOID AIR LEAKS!! Cuff should be easy to squeeze and barely recover
Inline Suction	Must be connected between ETT and filter
ET disconnecting	Ensure filter remains on ETT, clamp tube before disconnecting; be quick about it if patient no longer paralyzed!
Filter	Filter should be interposed at all times between ETT and ventilator/BVM, but after the inline suction segment
SGD/CRIC	Cover face with surgical mask if ventilating via SGD or Cricothyrotomy
Elevate head	Elevate head 30 degrees to reduce aspiration and facilitate ventilation
Restraints	Consider wrist restraints to prevent unwanted self-extubation
CXR, portable	To confirm ET tube position (2 - 3cm above carina) and look for complications
ABG (or VBG, with sat 90-95%)	30 min. after intubation or any change in ventilator settings
NG or OG Tube	To decompress stomach, prevent aspiration, ease ventilation
Bronchodilators	Try not to use them; if must, use MDI Port
Mouth wash	Chlorhexidine mouthwash decontamination may help reduce risk of aspiration pneumonia
DVT Prevention	LMWH, Ted Stockings
Ulcer Prevention	Adjust position q2h, low pressure mattress
Rescue equipment	BVM + PEEP at bedside, ready for use if ventilator malfunctions; ensure that HME filter remains connected to ETT, and clamp ETT before disconnecting
Ventilator Alarms	"DOPE" Displacement, Obstruction, Pneumothorax, Equipment failure LOW PRESSURE = leak in the system, disconnected HIGH PRESSURE = tube kinked/bitten, mucous plug, coughing, tension pneumothorax, ARDS