CPP TCCC

COMBAT PARAMEDIC/ PROVIDER

TACTICAL COMBAT CASUALTY CARE COURSE

MODULE 20: CASUALTY MONITORING

Committee on Tactical Combat Casualty Care (CoTCCC)

TCCC TIER 1
All Service Members

TCCC TIER 2
Combat Lifesaver

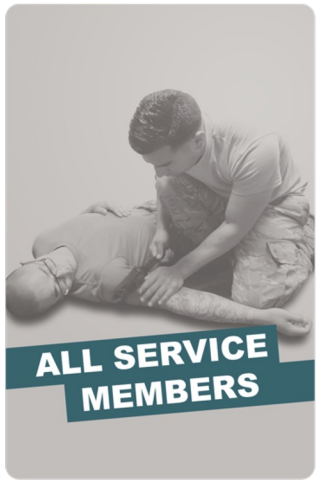
TCCC TIER 3
Combat Medic/Corpsman

TCCC TIER 4
Combat Paramedic/Provider

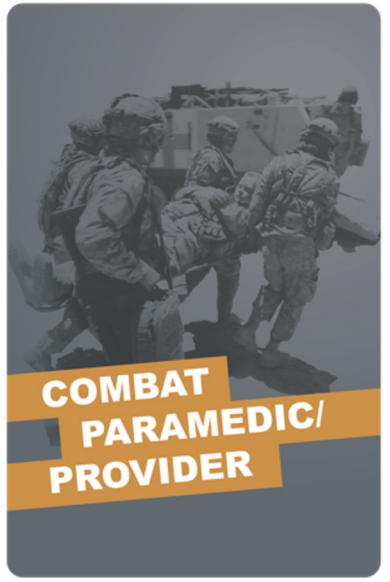
TACTICAL COMBAT CASUALTY CARE (TCCC) ROLE-BASED TRAINING SPECTRUM

ROLE 1 CARE

NONMEDICAL PERSONNEL



MEDICAL PERSONNEL



YOU ARE HERE

STANDARDIZED JOINT CURRICULUM

CPP TCCC

Module 20: Casualty Monitoring

1 x TERMINAL LEARNING OBJECTIVES

22 Given a combat or noncombat scenario perform monitoring of a trauma casualty during Tactical Field Care in combat in accordance with CoTCCC Guidelines.

- **22.1** Identify the methods and limitations of assessing level of consciousness, pulses, and respiratory rate in Tactical Field Care.
- **22.2** Demonstrate assessment of end-tidal CO2 with colorimetric device on a trauma casualty in Tactical Field Care.
- **22.3** Demonstrate assessment of end-tidal CO2 with digital device on a trauma casualty in Tactical Field Care.
- **22.4** Demonstrate electronic vital signs monitoring in Tactical Field Care.
- **22.5** Identify the indications, contraindications, and principles of foley catheterization and urinary output monitoring in Tactical Field Care.
- **22.6** Demonstrate urinary catheterization using a Foley catheter on a trauma casualty in Tactical Field Care.
- **22.7** Describe the indications and considerations of monitoring urinary documentation on a trauma casualty in Tactical Field Care.
- **22.8** Identify methods for monitoring vital sign trends in Tactical Field Care.
- **22.9** Identify any evidence-based medicine, best practices, casualty data, and Subject Matter Expert consensus on casualty monitoring techniques in Tactical Field Care.

9 x ENABLING LEARNING OBJECTIVES

= **Terminal Learning Objectives** = Cognitive ELOs = Performance ELOs

CASUALTY MONITORING OVERVIEW

LEVEL OF CONSCIOUSNESS

M A R C H

- Airway
- Circulation/Shock
- Hypothermia
- Head Injuries
- PFC / PCC

RESPIRATIONS

M A R C H

- Respiration
- PFC / PCC

PULSE/HEART RATE

M A R C H

- Respiration
- Circulation/Shock
- PFC / PCC

PULSE OXIMETRY

M A R C H

- Airway
- Respiration
- Circulation/Shock
- Head Injuries
- TACEVAC
- PFC / PCC

⚠ **Reassessment** is a continuous process

CASUALTY MONITORING OVERVIEW

LEVEL OF CONSCIOUSNESS

P A W S

- PAIN

RESPIRATIONS

P A W S

- PAIN
- WOUNDS

PULSE/HEART RATE

P A W S

- PAIN
- WOUNDS
- SPLINTING

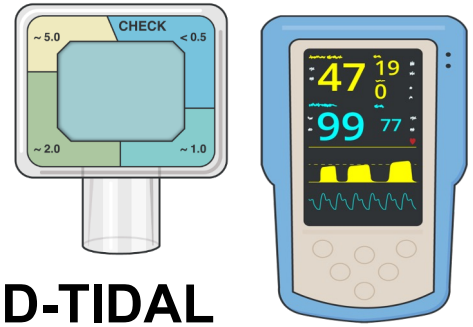
PULSE OXIMETRY

P A W S

- PAIN

⚠ **Reassessment** is a continuous process

CASUALTY MONITORING OVERVIEW



END-TIDAL CO2 MONITORING

MARCH

- Airway
- Respiration
- Tactical Evacuation Care
- Prolonged Casualty Care

URINARY OUTPUT MONITORING

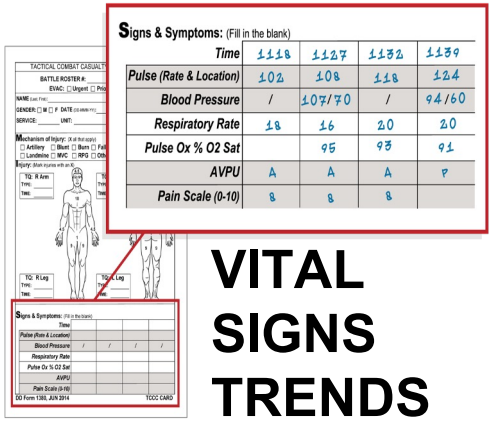
MARCH

- Circulation/Shock
- Prolonged Casualty Care

VITAL SIGNS MONITORING

MARCH

- Circulation/Shock
- Head Injuries
- Tactical Evacuation Care
- Prolonged Casualty Care



VITAL SIGNS TRENDS

MARCH

- Tactical Evacuation Care
- Prolonged Casualty Care

⚠ **Reassessment** is a continuous process

LEVEL OF CONSCIOUSNESS ASSESSMENT

AVPU may be difficult to assess depending on the environment and the mission situation

AVPU

A – ALERT

Ask *"Are you okay?"* if the casualty answers coherently, then they are an **A**, or **Alert**

V - VERBAL

Ask "*Are you okay?*"
if the answer is not clear, ask the casualty to squeeze your finger or move an arm or leg; and if they respond, they are **V**, or responds to **Verbal**

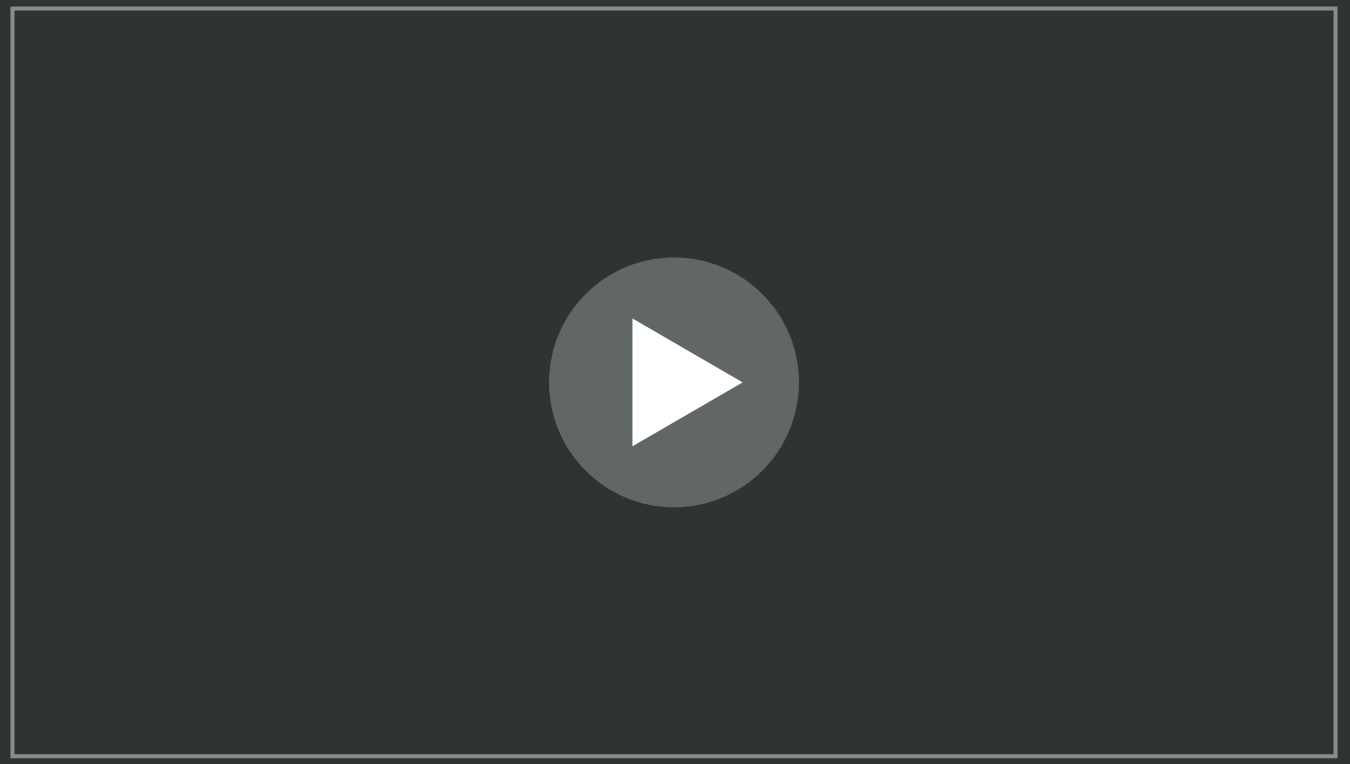
P – PAIN

If no response, rub the breastbone, squeeze a toe over the toenail, or pinch their nose or earlobe (avoid injured areas); **if they respond**, they are a **P**, or responds to **Pain**

U - UNRESPONSIVE

If there is no response, they are **U**, or **Unresponsive**

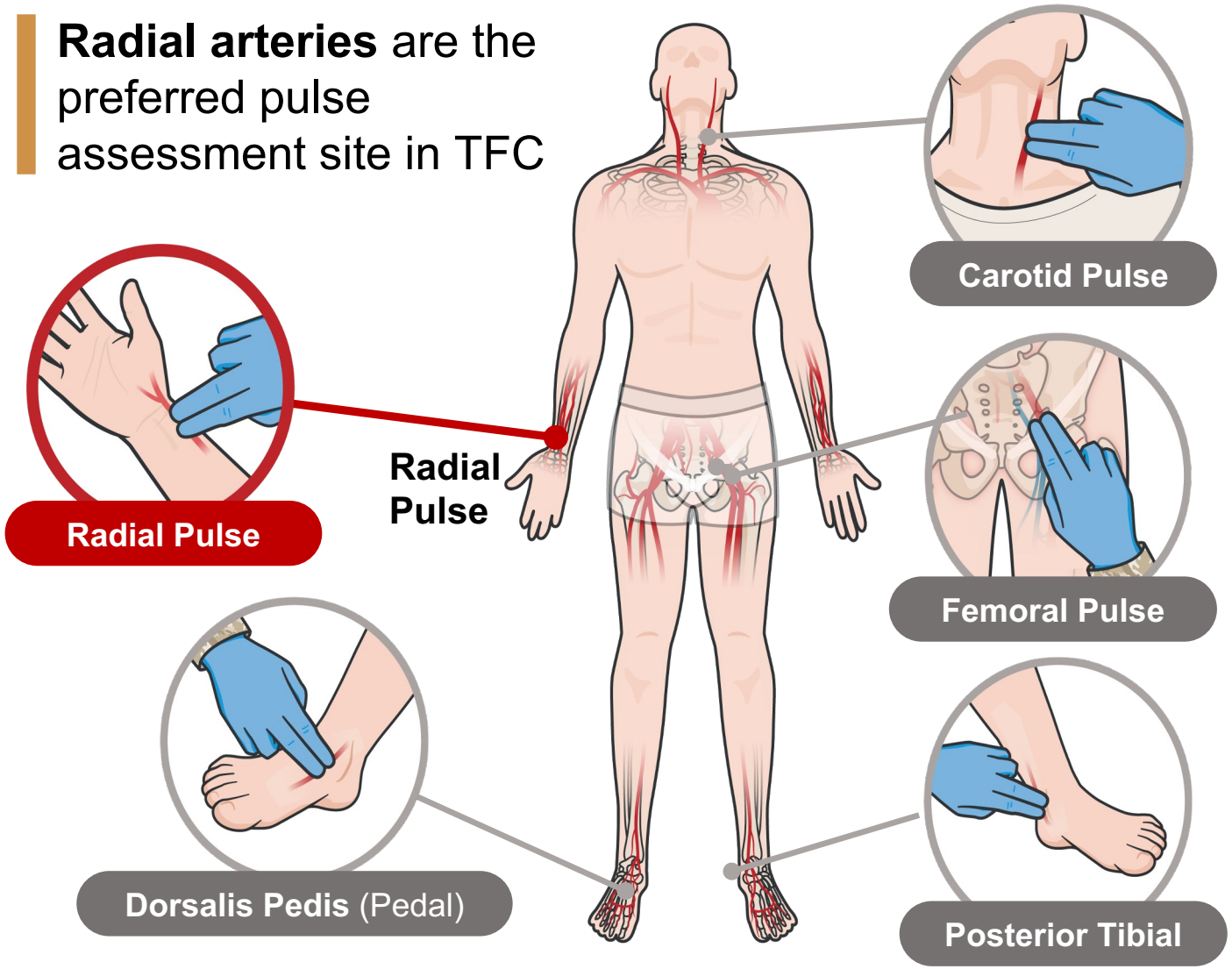
AVPU ASSESSMENT



Video can be found on deployedmedicine.com

PULSE ASSESSMENT

Radial arteries are the preferred pulse assessment site in TFC

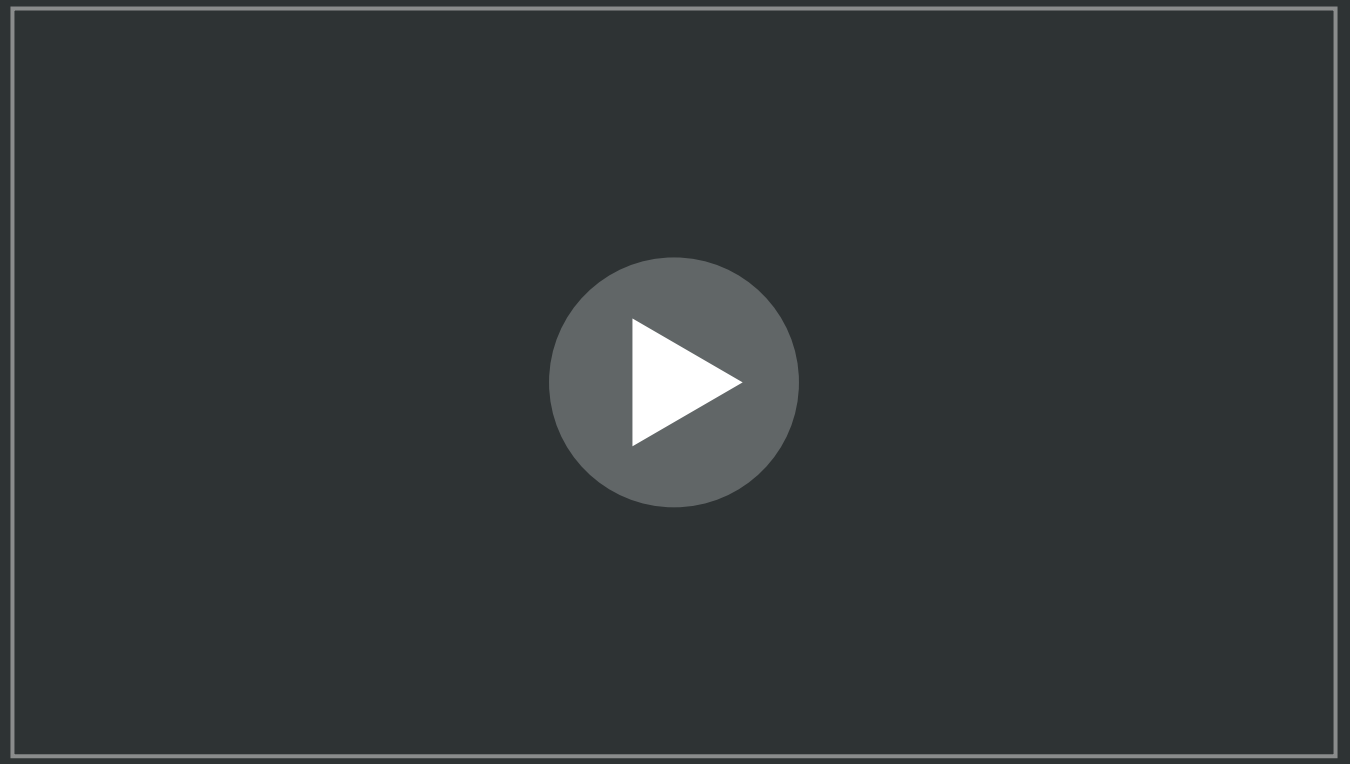


Pulse Assessment Principles:

- **Presence or absence** of radial pulses is a sign of **hypotension/shock** and need for fluid resuscitation
- **PRACTICE** assessing pulses on a variety of people to develop techniques for discovering anatomical variants
- **PRESS** firmly at the pulse site, but avoid causing harm to the casualty by pressing too hard
- **DOCUMENT** all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty

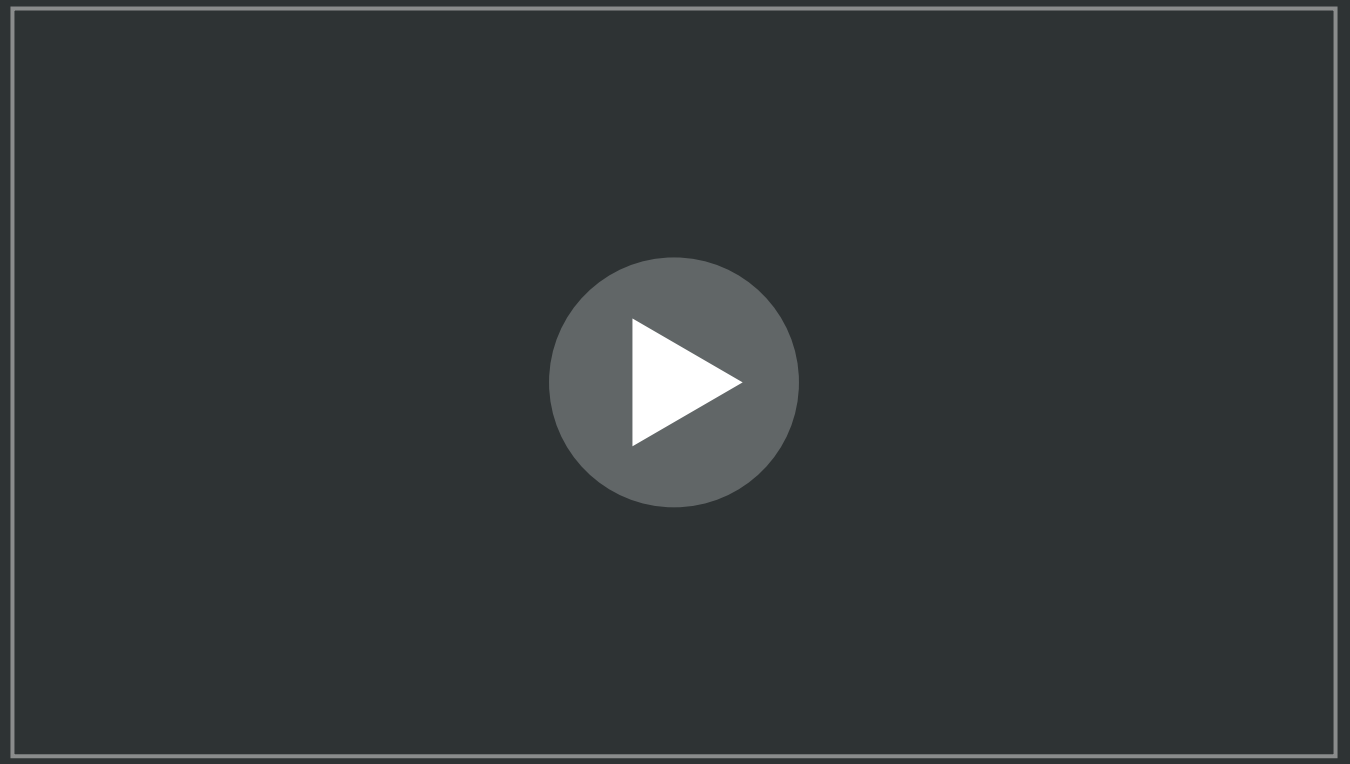
Using a timing device: Count the radial pulse bpm for **15 secs** x (**multiply**) by **4** = casualty's pulse rate in bpm

RADIAL PULSE ASSESSMENT



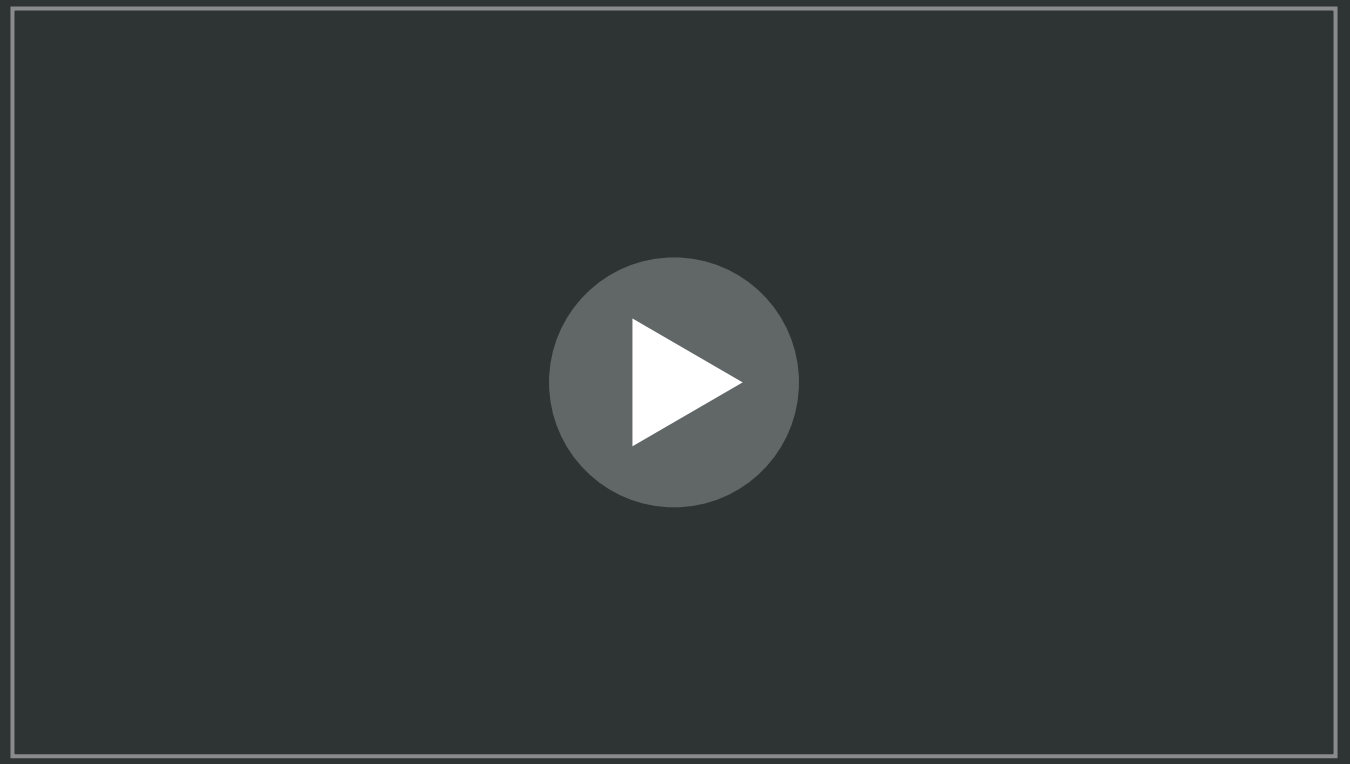
Video can be found on deployedmedicine.com

CAROTID PULSE ASSESSMENT



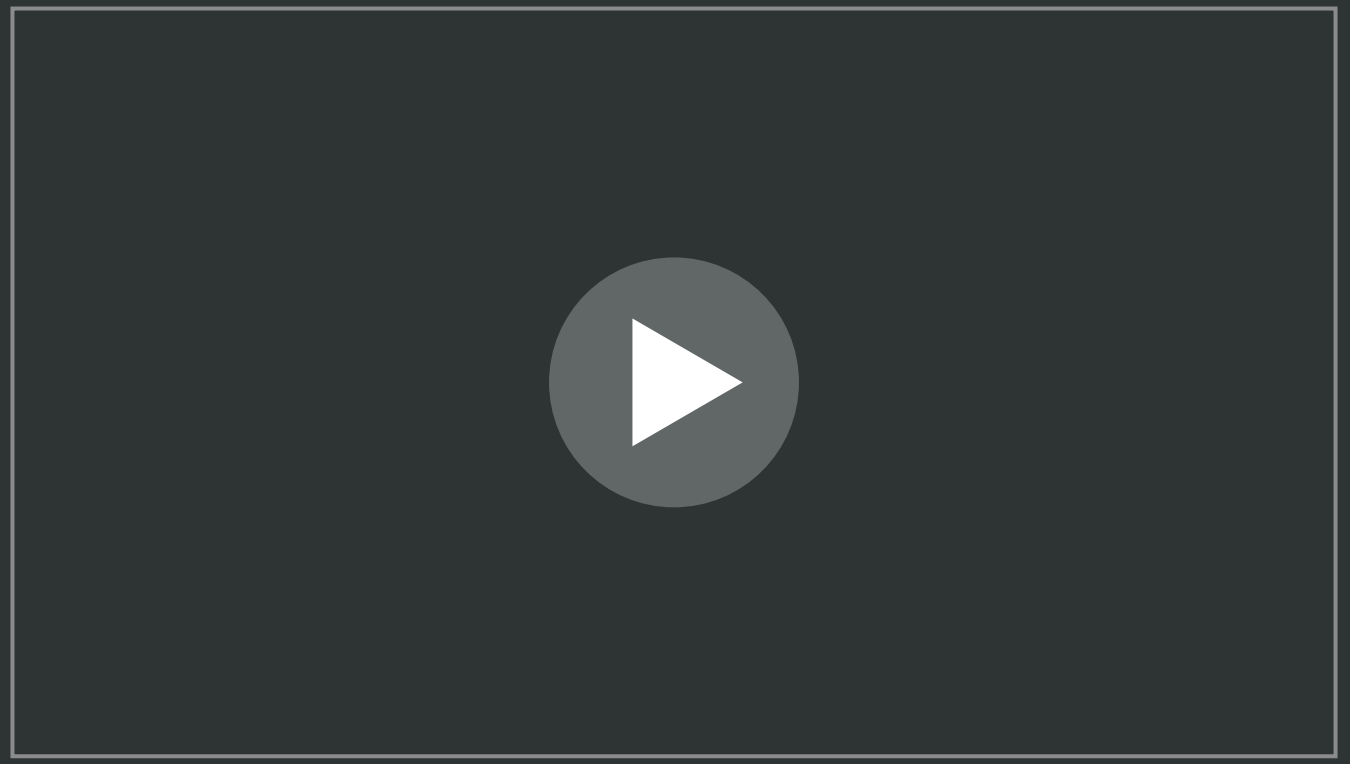
Video can be found on deployedmedicine.com

FEMORAL PULSE ASSESSMENT



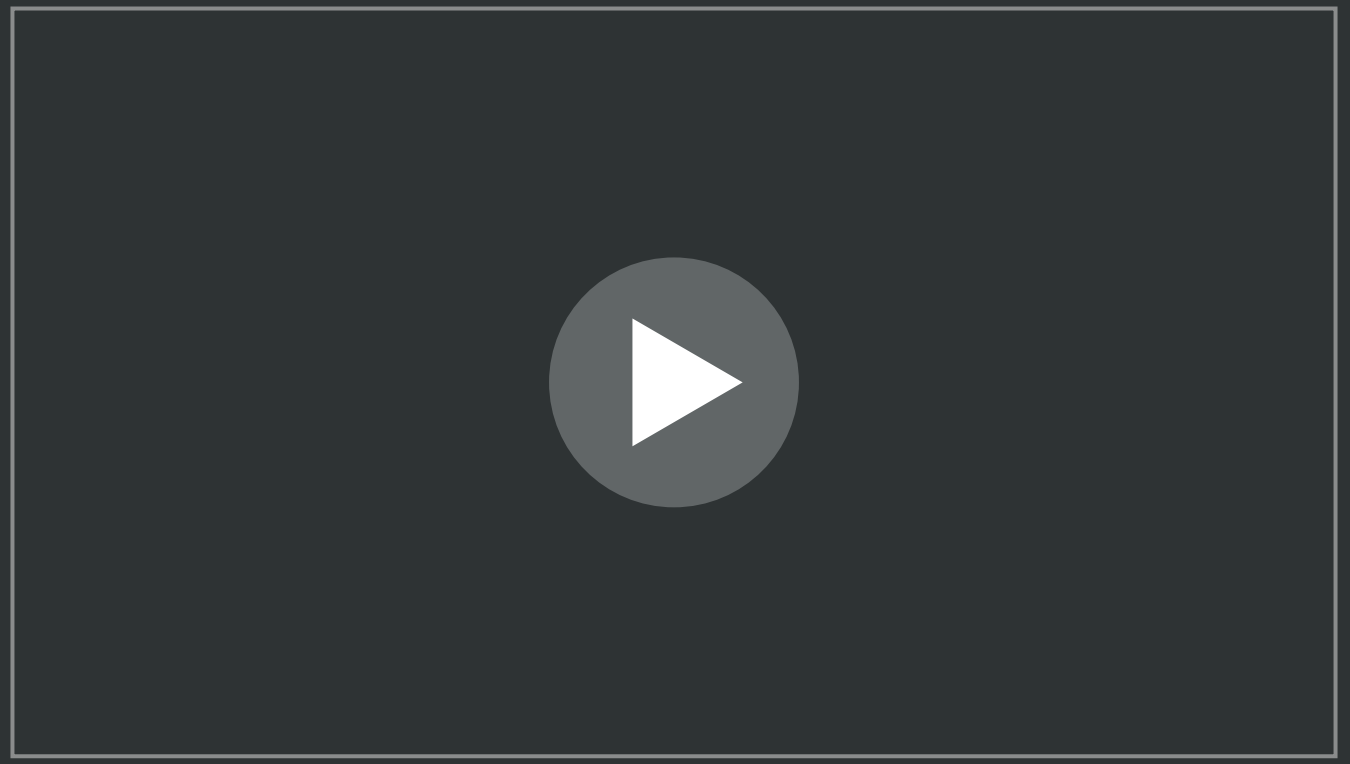
Video can be found on deployedmedicine.com

DORSALIS PEDIS PULSE ASSESSMENT



Video can be found on deployedmedicine.com

POSTERIOR TIBIAL PULSE ASSESSMENT



Video can be found on deployedmedicine.com

RESPIRATION ASSESSMENT

RESPIRATORY RATE ASSESSMENT

LOOK
Rise & fall of chest

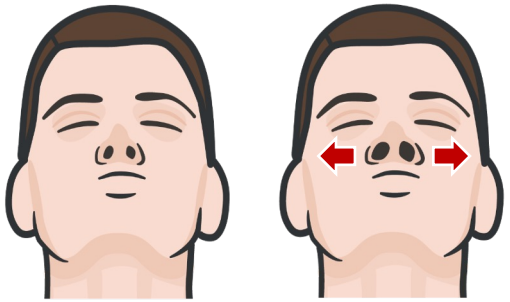
LISTEN
Breath sounds

FEEL
Breath or chest rise

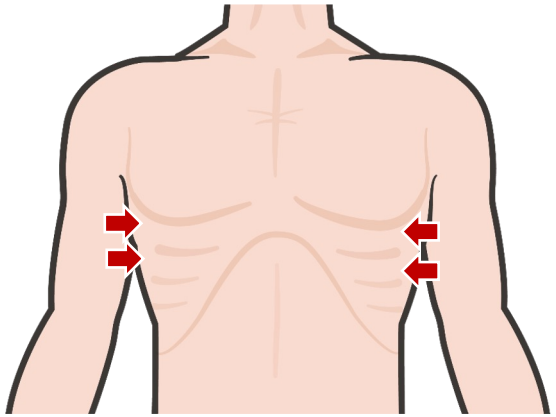
- Respirations may be difficult to assess depending on the environment and the mission situation
- Document rate, effort, and time on casualty's DD Form 1380 TCCC Casualty Card

Level of Evidence: B-NR

RESPIRATORY EFFORT ASSESSMENT



◀ NASAL FLARING



▲ RETRACTIONS

▲ TRIPOD RESPIRATIONS

PULSE OXIMETRY MONITORING

Hypoxemia in TFC is difficult to assess

- **Low-light** conditions mask signs
- Physical findings impaired by the **tactical environment**

Use pulse oximetry in casualties with:

- Injuries that impair oxygenation
  Blasts, chest injuries, etc.
- Traumatic brain injury
  Ensure O_2 Sats >90%

Level of Evidence: B-NR

Factors Affecting Pulse Ox Readings

LOW readings may be seen with:

- Shock
- Cold temperatures
- Altitude

HIGH readings may be seen with:

- Carboxyhemoglobinemia

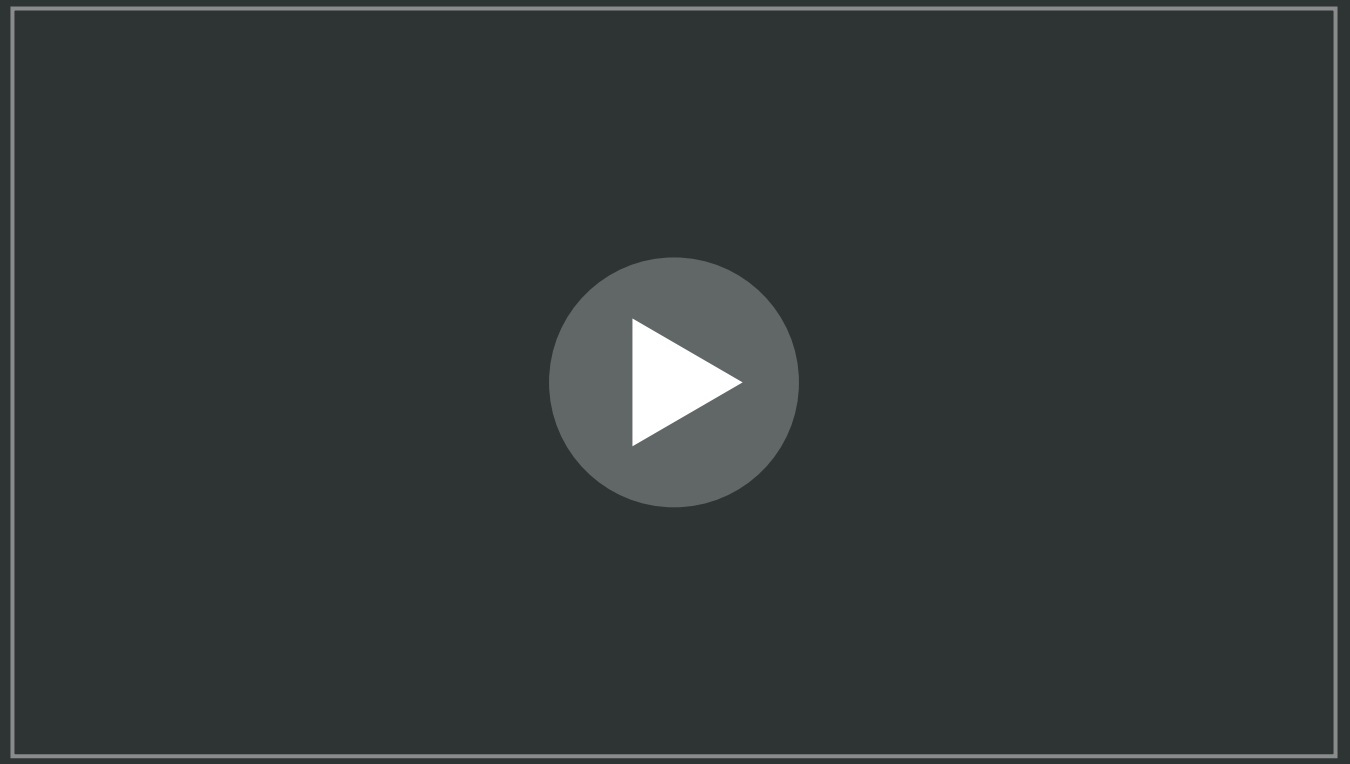
IMPAIRED readings may be seen with:

- Nail polish
- Very bright environments
- Skin pigmentations
- Motion artifact
- Poor perfusion

NOTE: *Shock is **not** always preceded by a fall in O_2 saturation levels*

TCCC Guideline Recommendations for pulse ox:
Diagnosing and monitoring respiratory distress, pneumothorax, traumatic brain injury, and refractory shock

PULSE OXIMETRY

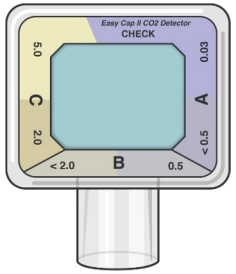


Video can be found on deployedmedicine.com

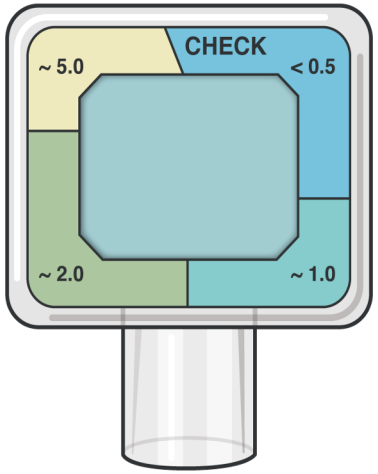
USING END-TIDAL CARBON DIOXIDE COLORIMETRIC DEVICES

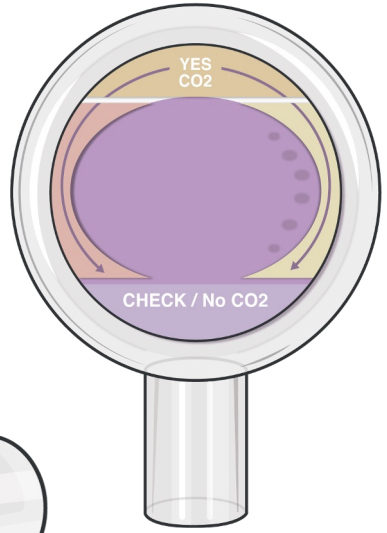
End-tidal carbon dioxide (ETCO2) uses

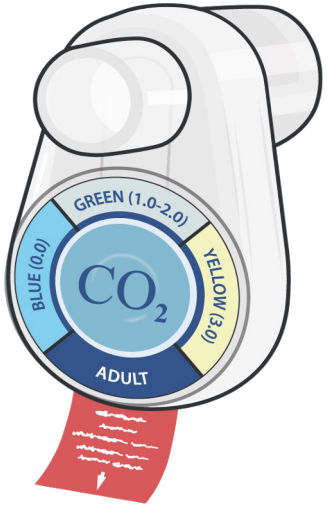
- **Confirm** advanced airway placement
- **Monitor** for effective ventilation



Qualitative
Colorimetric ETCO2 devices







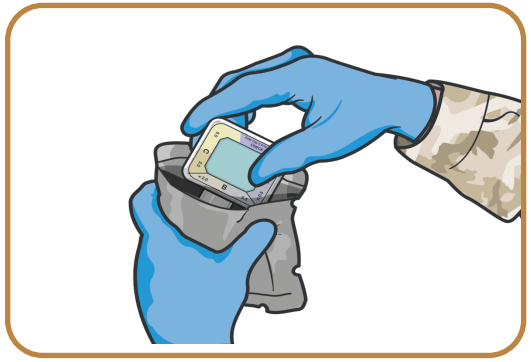
- **Confirm** sensor paper matches “check” color
- **Fit** tapered female end over the airway tube
- **Attach** ventilation aid (bag valve mask)
- **Give 6 breaths**
- **Assess** for color changes

Fluids (secretions, blood, sputum) can render ETCO2 detectors **ineffective**

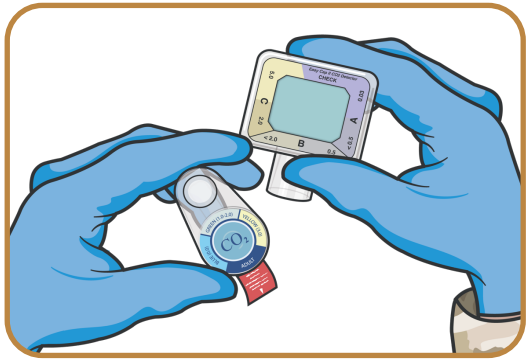
Replace standard colorimetric devices after 2hrs, pull-tab devices after 24hrs

Level of Evidence: B-NR

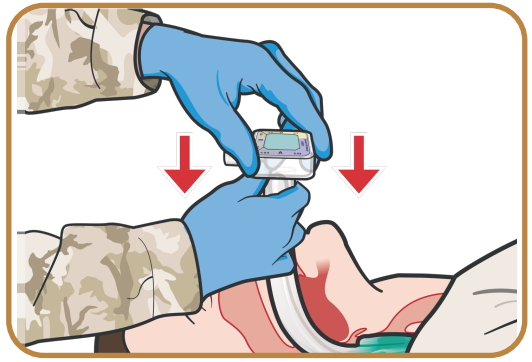
ETCO2 COLORIMETRIC DEVICES



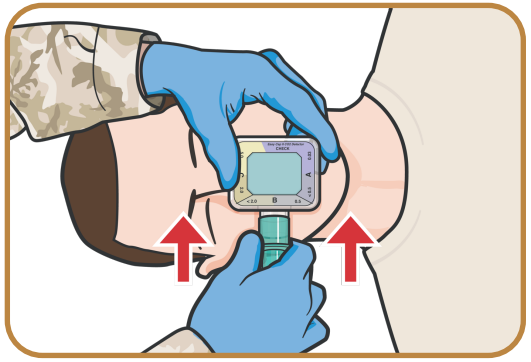
1 **REMOVE** the ETCO2 detection device from its package.



2 **CHECK** color of the indicator; if it is not similar to the “check” color on the reference scale (usually purple, with the exception of devices with a pull tab, which is usually a specific shade of blue), discard the unit and use a new one.

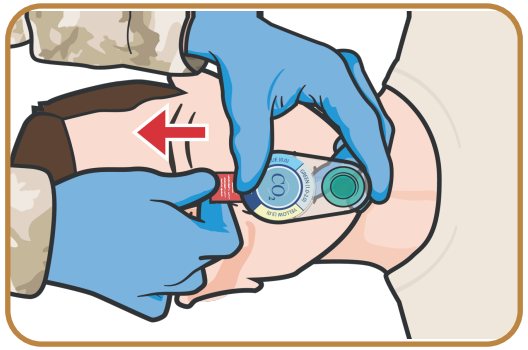


3 Following the establishment of an advanced airway, **ATTACH** the ETCO2 detector to the advanced airway by sliding the tapered end (15mm **internal** diameter connector) of the monitoring device onto the airway device.



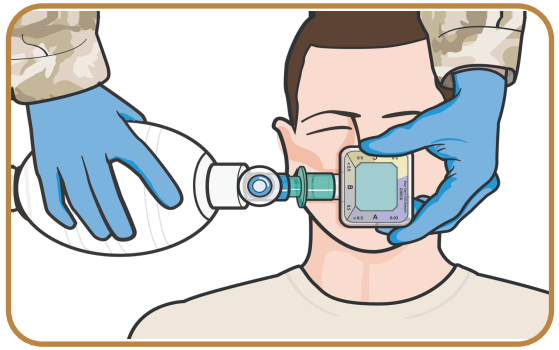
4 **CONNECT** the distal end of the device (15mm outer diameter connector), which is identical to an advanced airway connector, to the standard oxygen delivery equipment.

ETCO2 COLORIMETRIC DEVICES



5

If the device has a **PULL TAB**, pull the red tab from the device to activate the ETCO2 detection function.



6

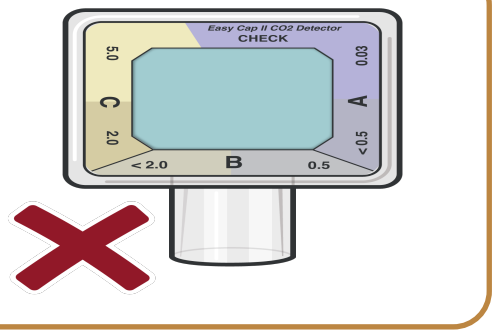
To assess proper airway placement, **ATTACH** a bag valve mask (BVM) to the ETCO2 detector, deliver six breaths, and compare the color change in the center indicator of the detector to the color ranges on the detector cover.

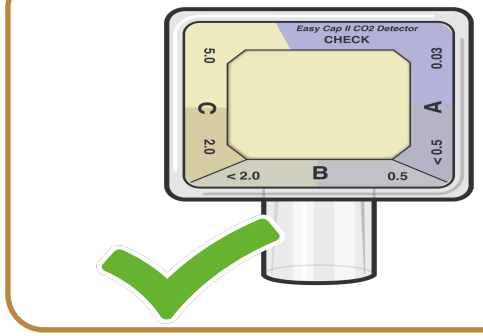
STEP 6 NOTE: Carbon dioxide detectors contain a chemical indicator that is sensitive to CO2. When the detector is attached to a correctly positioned airway, the color of the indicator changes from the baseline "check" color (usually purple or a specific shade of blue) to a numbered or lettered color range (usually yellow) in response to elevated carbon dioxide concentrations.

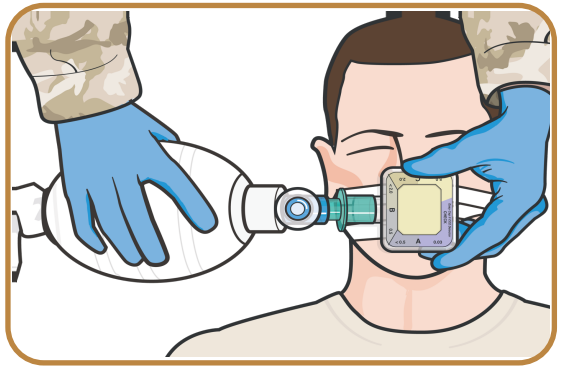
STEP 6 NOTE: When the detector is attached to an incorrectly positioned airway (in the esophagus, for example), the color of the indicator will not change or there will be an inadequate color change. In devices with a pull tab, a green or yellow/green color change indicates low levels of exhaled CO2.

STEP 6 CAUTION: ETCO2 detectors can be difficult to read in low-light or night vision conditions.

ETCO2 COLORIMETRIC DEVICES







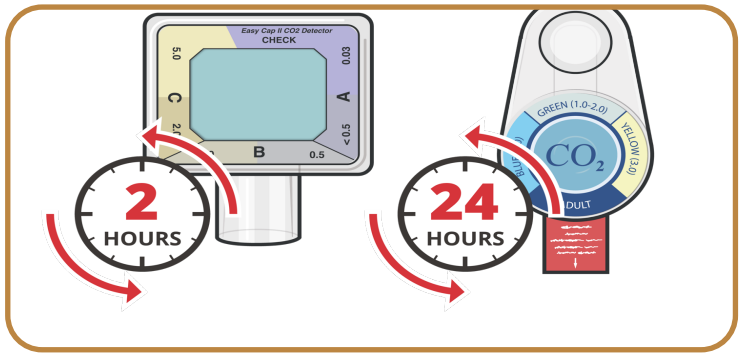
7 If there is **NO COLOR CHANGE** or an **INADEQUATE COLOR CHANGE** in the ETCO2 detector, the advanced airway should be repositioned, and placement should be reassessed with the ETCO2 detector and a BVM.

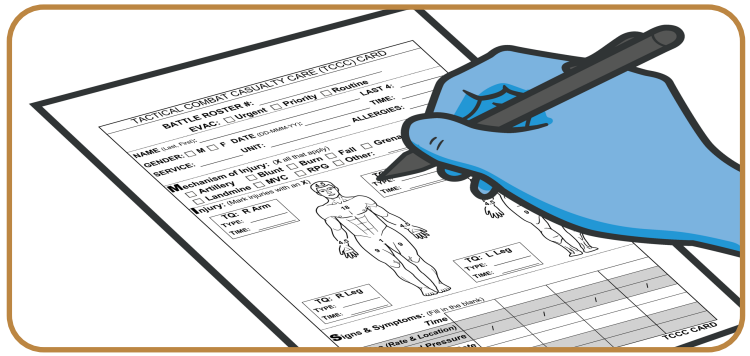
8 Once the color change is seen, signifying proper airway placement, **SECURE** the airway.

9 Continue to **MONITOR THE CASUALTY** and the ETCO2 detector for the proper color change, reassessing the casualty and repositioning the airway device if the detector reverts to its baseline “check” color or stops changing color with respirations.

STEP 7 CAUTION:
With very low cardiac output during cardiopulmonary resuscitation, there may be no color change in the ETCO2 detector, even though the airway is properly positioned

ETCO2 COLORIMETRIC DEVICES





10 **REPLACE** the ETCO2 detector after 2 hours or if exposed to fluids, unless using a device with a pull tab, in which case it can be used for up to 24 hours.

11 **DOCUMENT** all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

USING DIGITAL END-TIDAL CARBON DIOXIDE DEVICES

CAPNOGRAPHY:

Minimum: Colorimetric ETCO2 detector

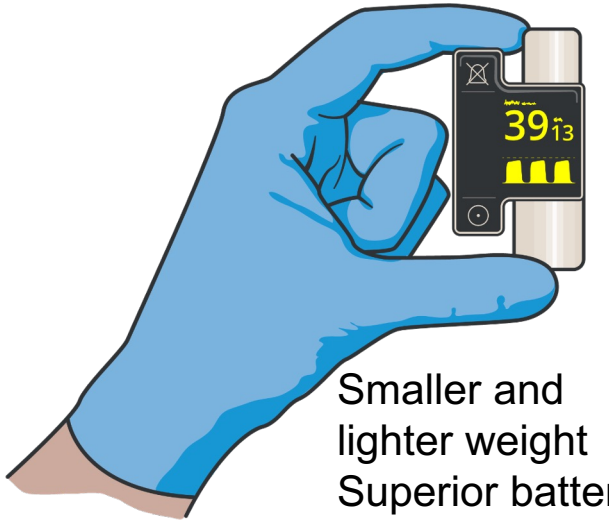
Better: Portable capnometer

Best: Waveform capnography on patient monitor

⚠ Train on the devices you are likely to use when deployed

ⓘ **Level of Evidence:** B-NR

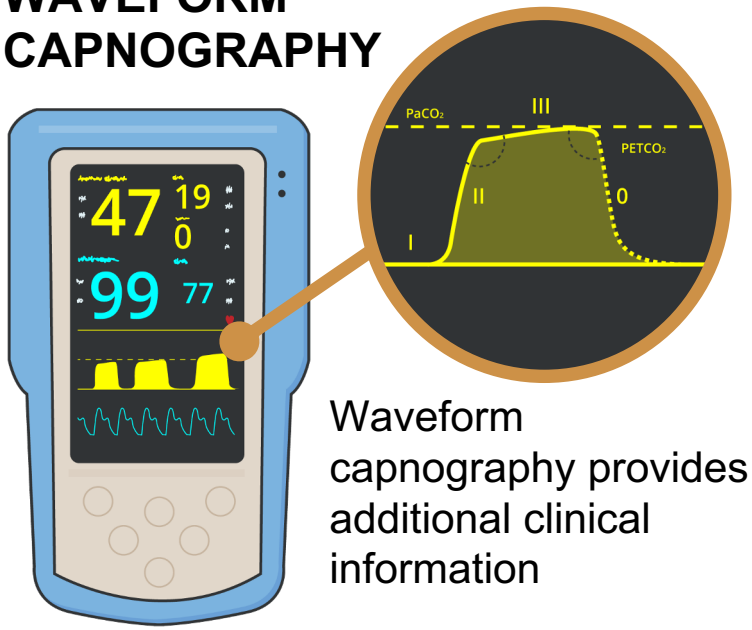
PORTABLE CAPNOMETER



Smaller and lighter weight
Superior battery life

CAPNOMETRY is the term used to describe the *numerical reading* corresponding to a CO_2 concentration

WAVEFORM CAPNOGRAPHY



Waveform capnography provides additional clinical information

CAPNOGRAPHY is the *waveform* produced with continuous measurement of CO_2 concentrations

USING DIGITAL END-TIDAL CARBON DIOXIDE DEVICES

End Tidal Carbon Dioxide Monitoring provides valuable information about carbon dioxide production and clearance.

- Often referred to as the **"Ventilation Vital Sign"**
- A sudden **DECREASE** in $ETCO_2$ can indicate hyperventilation or impending shock
- A sudden **INCREASE** in $ETCO_2$ can indicate malignant hyperthermia
- The **ABSENCE** of $EtCO_2$ in an intubated casualty is an indicator of misplaced ETT or potential life-threatening situation

Level of Evidence: B-NR

What is EtCO2 Capnography?

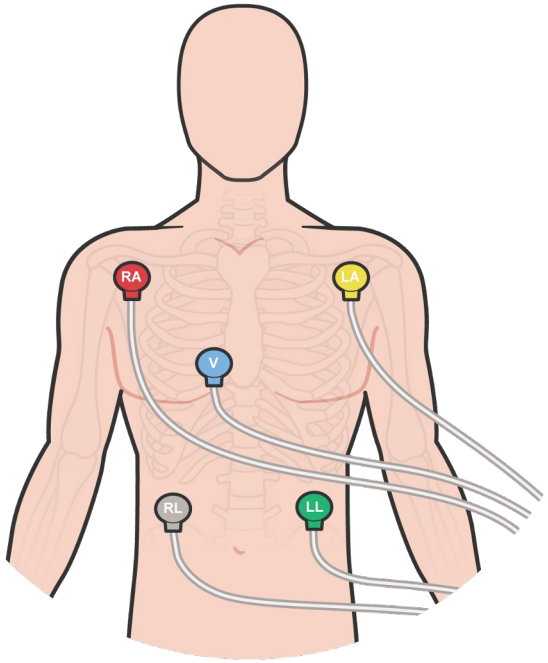
Capnography is an instrument used to measure the amount of CO_2 in exhaled air and represents the readings in a waveform tracing.

How Capnography works?

Infrared waves to measure carbon dioxide. Infrared waves have a lower frequency compared to light and is absorbed by gases that

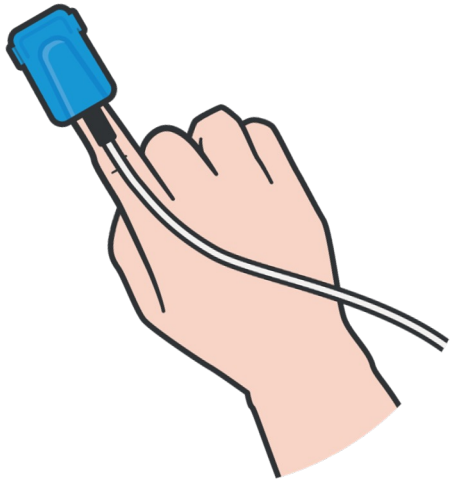
Capnography Types of $EtCO_2$ Sensors	
Mainstream Sensors	The adapter is put in between the breathing circuit and the tracheal tube, CO2 is then measures across your air passage.
Sidestream Sensors	A sample tube and an adapter are used to aspirate the gases from the respiratory system.

ELECTRONIC MONITORING



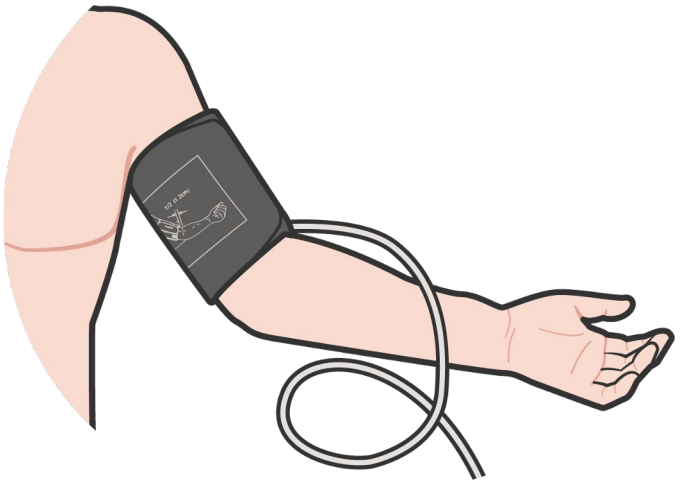
Cardiac Monitoring

- Pulse rate
- Rhythm abnormalities



Integrated Pulse Ox

- SpO2 measurement



Blood Pressure Monitor

- Automated reassessments

Other Capabilities

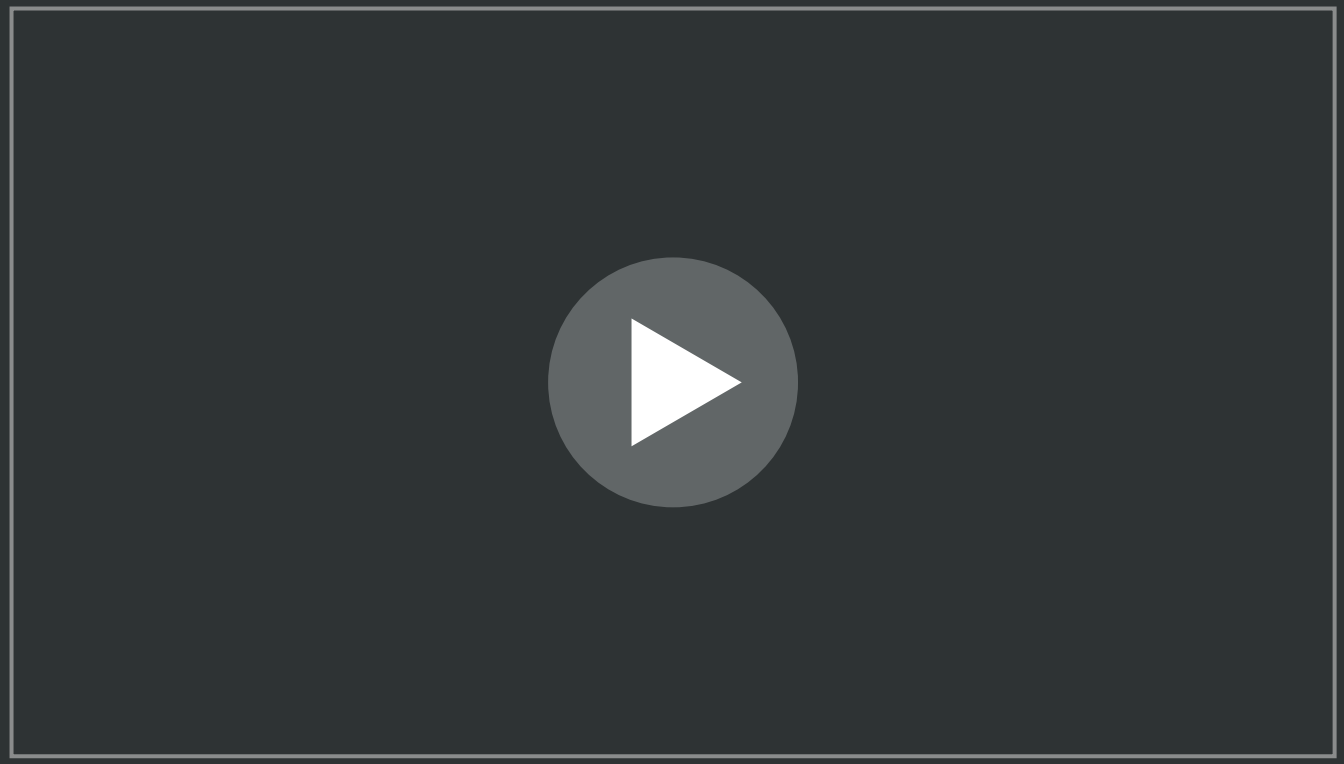
(vary by model)

- Temperature
- End-tidal CO2

Level of Evidence: B-NR

Battery life is limited; keep plugged into an electrical source when possible

MONITORING: ELECTRONIC VITAL SIGNS

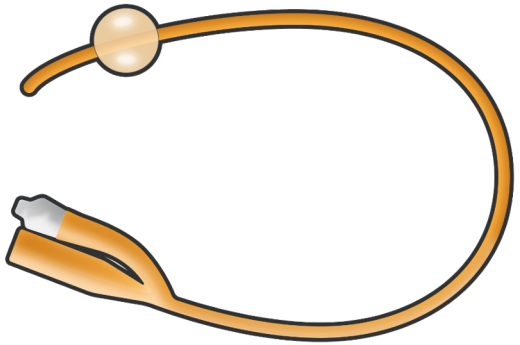


Video can be found on deployedmedicine.com

INDICATIONS & PRINCIPLES OF FOLEY CATHETERIZATION & URINE OUTPUT MONITORING

INDICATIONS for monitoring urine output:

- Fluid status in burn patients
- Assessment of ongoing resuscitation efforts
- Prolonged field care volume status



Goal for adequate urine output:

- *0.5 to 1.0 mL/kg/hr or 30-50 mL/hr*

Level of Evidence: B-NR

ADVANTAGES to catheterization:

- Rapid feedback on volume status
- Casualty comfort (non-ambulatory)
- Efficiencies in care and transport (non-ambulatory)

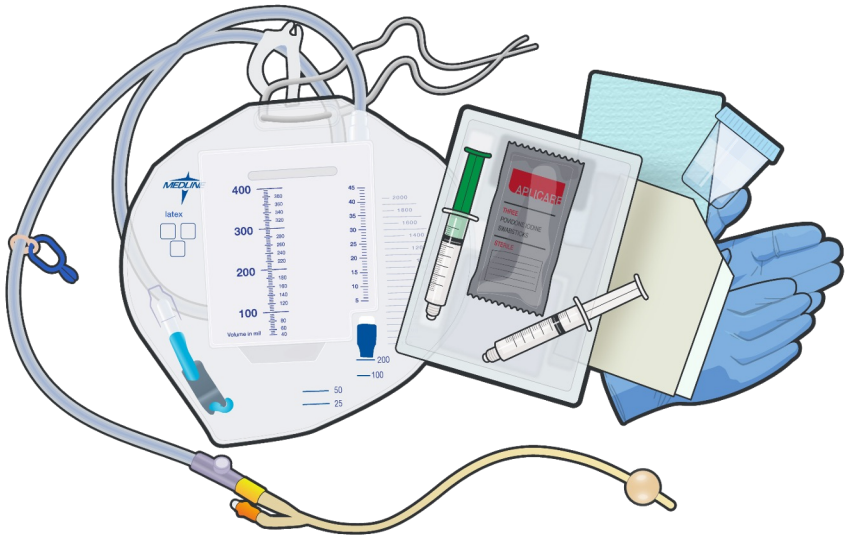
CONTRAINDICATIONS to catheter:

- Obvious trauma to urethra, blood at the meatus
- Gross hematuria
- Significant pain on insertion or inability to easily insert

FOLEY CATHETER INSERTION
URINE OUTPUT MONITORING

Basic steps for catheter insertion:

- Prepare materials
- Position casualty
- Drape and sterilize
- Lubricate and anesthetize
- Insert catheter
- Confirm and secure in place



Improvised catheter collector

Ambulatory self-collection

Urine collection bag

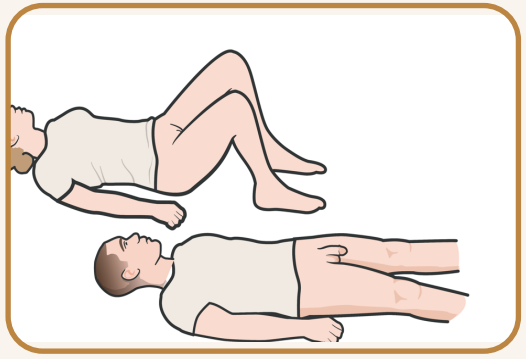
⚠ Whenever possible, use sterile techniques

⚠ Document urine output on an hourly basis

FOLEY CATHETERIZATION

1 **EXPLAIN** the procedure to the casualty, (if conscious).

2 **PROVIDE PRIVACY** for the casualty.



3 **POSITION** the casualty.

Female: Supine, with the legs extended or flexed and spread approximately 45 degrees.

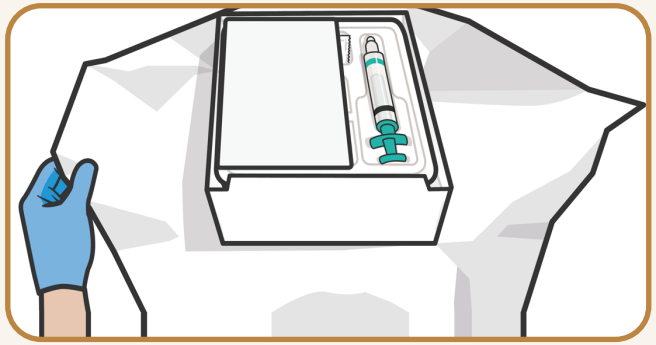
Male: Supine, with legs extended.

4 **REMOVE** the outer wrapper from the catheter kit.

CAUTION: If the kit is damaged, soiled, water-spotted, outdated, it must be discarded and replaced.

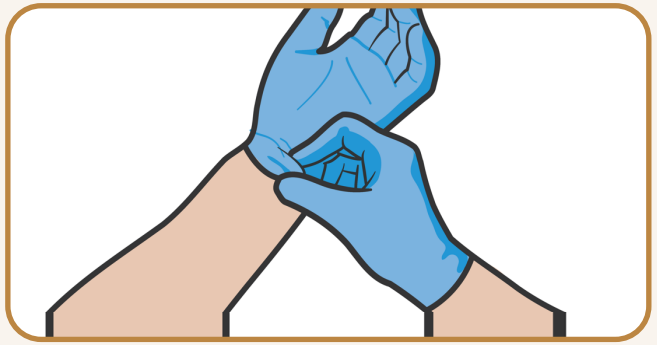
FOLEY CATHETERIZATION

5 **POSITION** the catheter kit in a place where is it easily accessible, and sterility can be maintained.



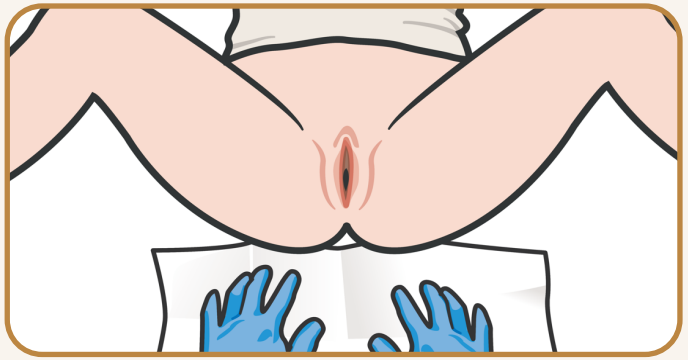
6 **UNFOLD** the inner wrapper, creating a sterile field.

CAUTION: Touching the inside of the inner wrapper will contaminate the unit.



7 **PUT ON** sterile gloves.

FEMALE FOLEY CATHETERIZATION



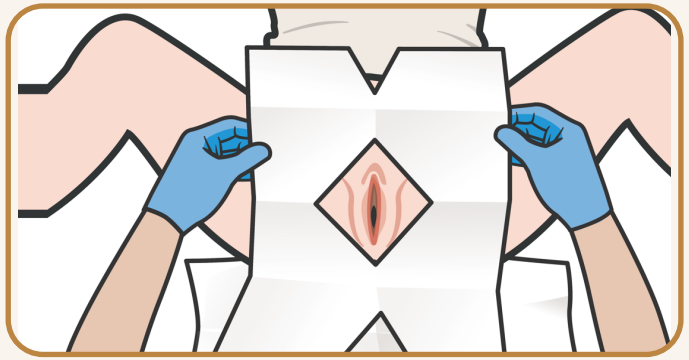
8

POSITION the first drape (plastic-coated).

(a) Aseptically remove and fully unfold the first drape.

(b) Grasp the drape at the top edge (plastic side away) and fold the top of the drape over the gloved hands to make a cuff.

(c) Place the drape, plastic side down, on the bed between the casualty's legs. Slip the cuffed edge under the casualty's buttocks.

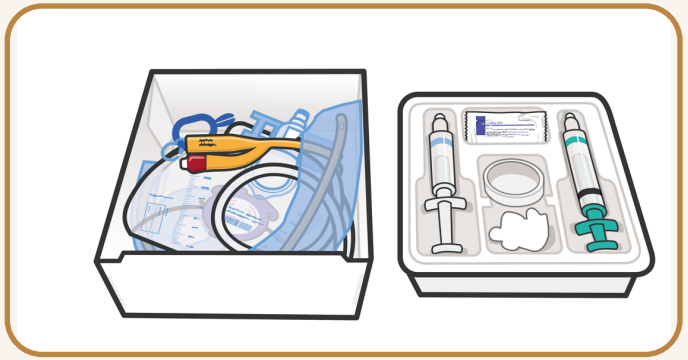


9

POSITION the second drape (fenestrated).

(a) Aseptically removed and fully unfold the second drape.

(b) Place the drape over the genitalia ensuring the window exposes the labia.



10

PREPARE Catheterization kit

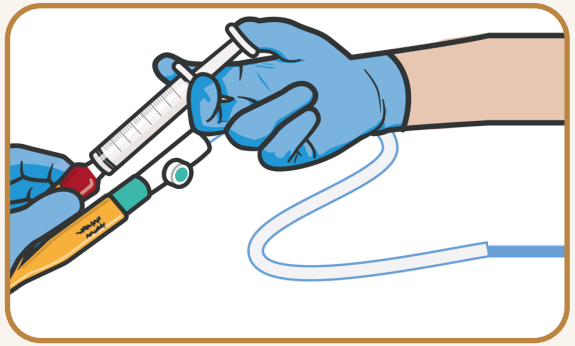
(a) Open the package of sterile lubricant, and squeeze it into a corner of the compartment in which it was stored in.

(b) Open the package of antiseptic solution and pour it over the cotton balls.

(c) Remove the plastic cover from the catheter and tubing (if included).

NOTE: Preparation of catheterization kit sequence and configuration may differ between products.

FEMALE FOLEY CATHETERIZATION

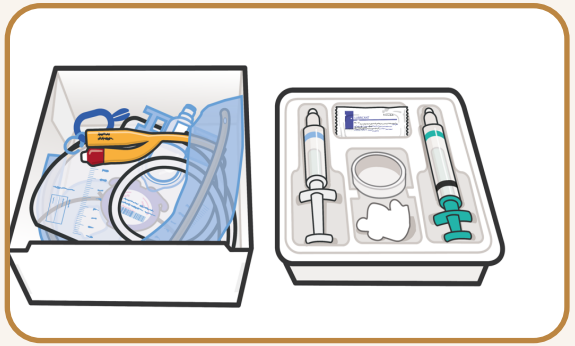


11 **TEST** the catheter's balloon.

(a) Attach the prefilled syringe to the valve on the catheter and twist it to lock it in place.

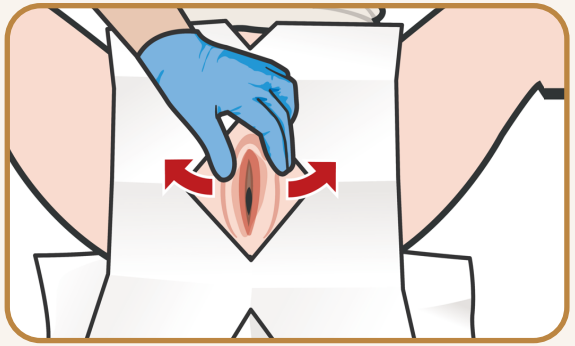
(b) Inject the contents of the syringe (usually 5 to 10 centimeters [cc] of water) into the balloon and observe for leaks.

(c) Deflate the balloon by aspirating the water back into the syringe and leave the syringe in place.



12 **PLACE** the catheter back into the kit for later use.

NOTE: If the kit does not come with a pre-connected urine drainage system, ensure the foley catheter is securely connected to the drainage system.



13 **CLEAN** catheterization site with cotton balls or swabs covered in povidone iodine solution.

NOTE: Cotton balls should be held with forceps.

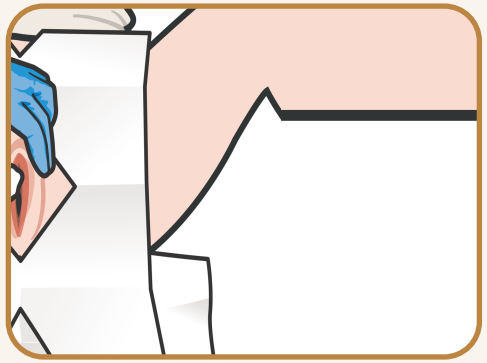
(a) Gently spread the labia open with nondominant hand

(b) Place the thumb and forefinger between the labia minora.

(c) Separate the labia and pull up slightly.

NOTE: Discard the equipment If the balloon leaks and begin the procedure again with new equipment.

FEMALE FOLEY CATHETERIZATION



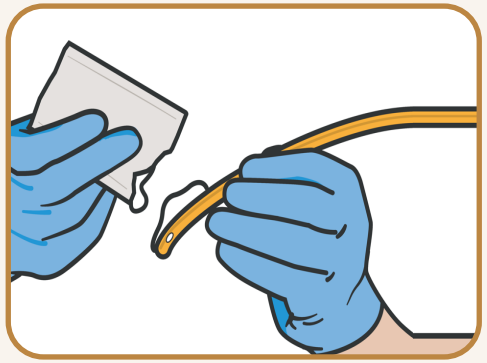
13

(d) With the dominant hand, clean the far labia with a cotton ball or swab, moving from the clitoris toward the anus.

(e) Use a second cotton ball or swab to clean the near labia.

(f) Use a third cotton ball or swab to clean down the center, directly over the urinary meatus.

(g) Keep the labia spread throughout the remainder of the procedure.

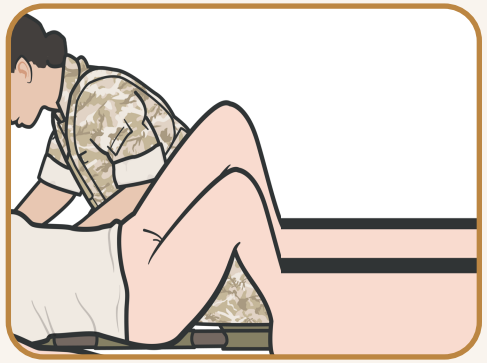


14

LUBRICATE the catheter.

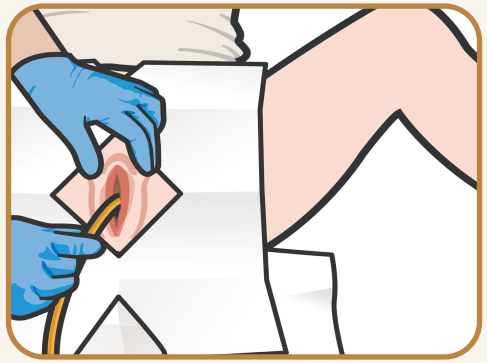
(a) Pick up the catheter with the dominant hand about 4 inches from the tip while maintaining positive control of the remaining tubing.

(b) Apply lubricant to the catheter tip.



15

INSTRUCT the casualty (if conscious) to relax and breathe through the mouth.



16

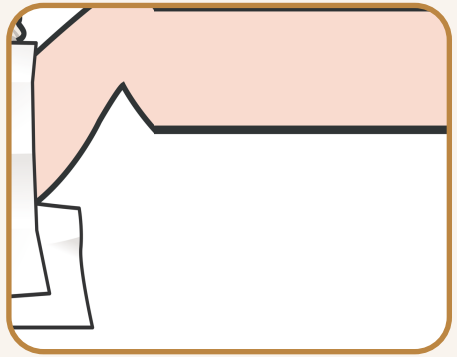
INSERT the catheter.

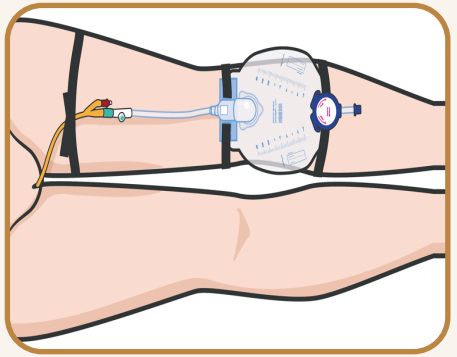
(a) Gently insert the catheter into the urethra about 2 to 3 inches or until resistance is met.

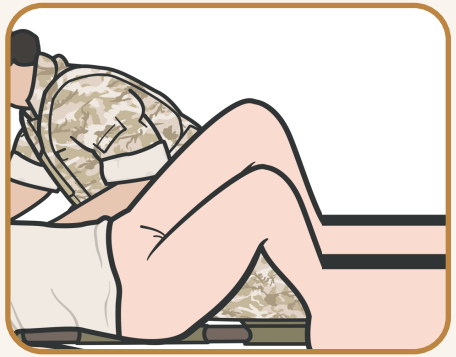
(b) Continue to advance the catheter until urine begins to flow (about 2 to 3 inches further).

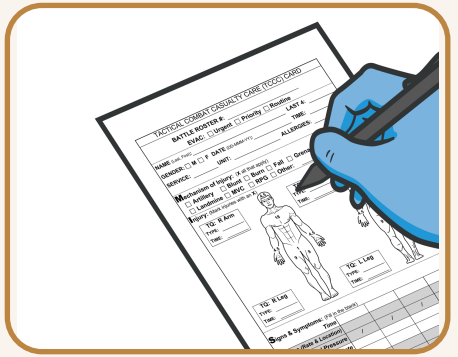
(c) Release the labia and hold the catheter securely with the nondominant hand.

FEMALE FOLEY CATHETERIZATION









17 **INFLATE** the balloon with the prefilled syringe of sterile water.

(a) Remove the syringe from the catheter by using a twisting motion.

(b) Gently pull back on the catheter until resistance is met to ensure that the balloon is fully inflated and seated in the bladder.

18 **REMOVE** the drapes.

19 **SECURE** the catheter to the inner thigh or stomach with tape.

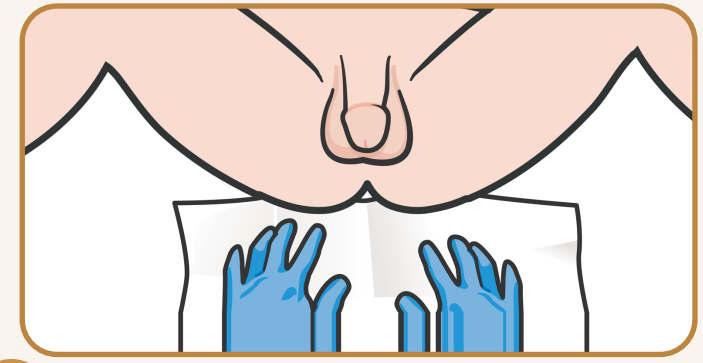
20 **DISPOSE** of the used equipment and clean the area.

21 **REPOSITION** the casualty, as needed.

22 **DOCUMENT** all findings and treatments on a DD Form 1380 TCCC Card and attach to the casualty.

NOTE: If the balloon is difficult to inflate, advance the catheter another **½ to 1 inch** to ensure that the catheter tip is fully within the bladder.

MALE FOLEY CATHETERIZATION



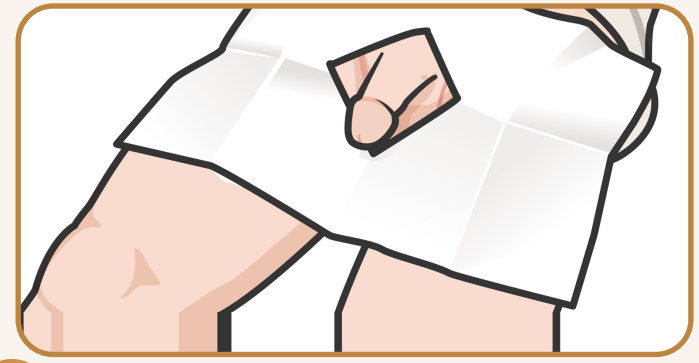
8

POSITION the first drape (plastic-coated).

(a) Aseptically remove and fully unfold the first drape.

(b) Grasp the drape at the top edge (plastic side away) and fold the top of the drape over the gloved hands to make a cuff.

(c) Place the drape, plastic side down, on the bed between the casualty's legs. Slip the cuffed edge under the casualty's buttocks.

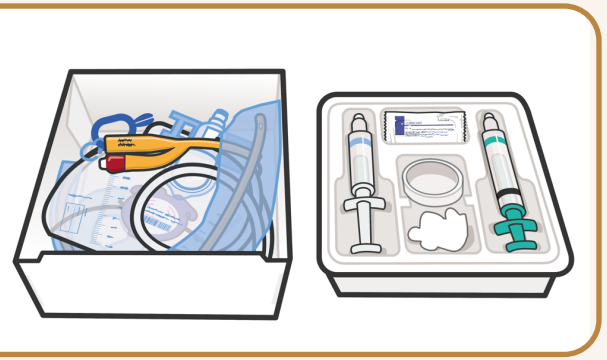


9

POSITION the second drape (fenestrated).

(a) Aseptically removed and fully unfold the second drape.

(b) Place the drape over the genitalia ensuring the window exposes the labia.



10

PREPARE Catheterization kit

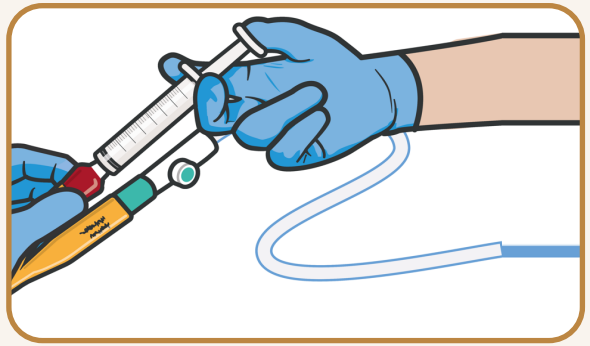
(a) Open the package of sterile lubricant, and squeeze it into a corner of the compartment in which it was stored in.

(b) Open the package of antiseptic solution and pour it over the cotton balls.

(c) Remove the plastic cover from the catheter and tubing (if included).

NOTE: Preparation of catheterization kit sequence and configuration may differ between products.

MALE FOLEY CATHETERIZATION



11

TEST the catheter's balloon.

(a) Attach the prefilled syringe to the valve on the catheter and twist it to lock it in place.

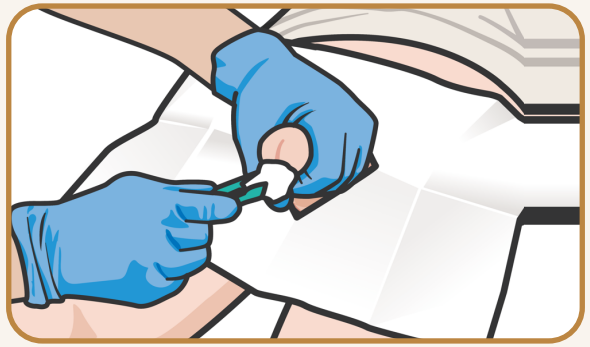
(b) Inject the contents of the syringe (usually 5 to 10 [cc] of water) into the balloon and observe for leaks.

(c) Deflate the balloon by aspirating the water back into the syringe and leave the syringe in place.

12

PLACE the catheter back into the kit for later use.

NOTE: If the kit does not come with a pre-connected urine drainage system, ensure the foley catheter is securely connected to the drainage system.



13

CLEAN catheterization site with cotton balls or swabs covered in povidone iodine solution.

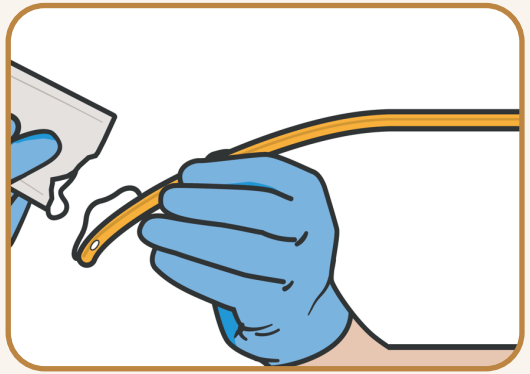
(a) Support the penis with the nondominant hand.

(b) With the dominant hand, clean the penis with a cotton ball or swab, moving in a circular motion from the urinary meatus toward the base of the glans.

(c) Repeat the procedure, using a second and third cotton ball or swab.

NOTE: Discard the equipment If the balloon leaks and begin the procedure again with new equipment.

MALE FOLEY CATHETERIZATION

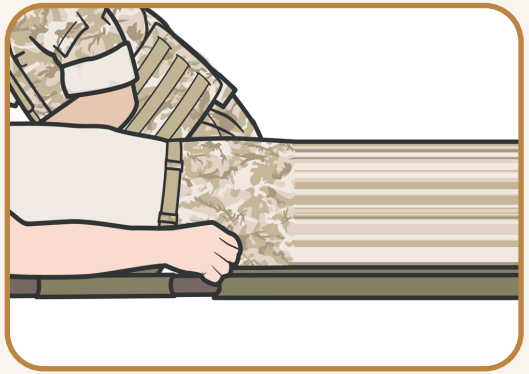


14

LUBRICATE the catheter.

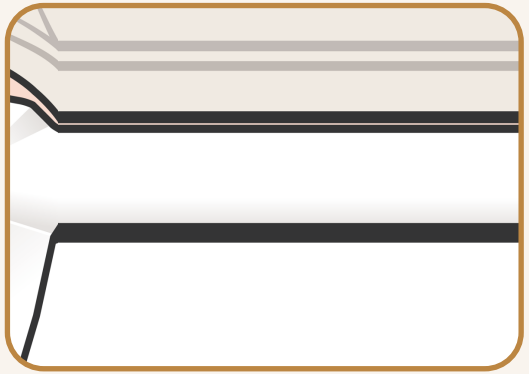
(a) Pick up the catheter with the dominant hand about 4 inches from the tip while maintaining positive control of the remaining tube.

(b) Apply lubricant to the catheter tip.



15

INSTRUCT the casualty (if conscious) to relax and breathe through the mouth



16

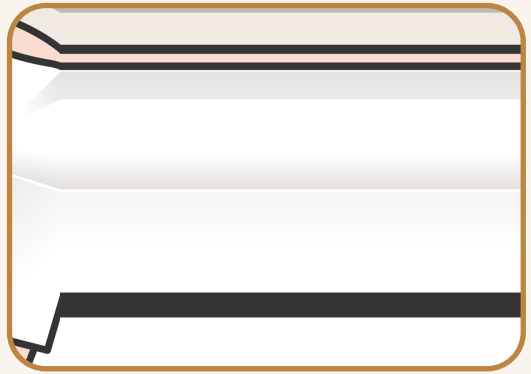
INSERT the catheter.

(a) Draw the penis upward and forward to a 60–90-degree angle.

(b) Gently insert the catheter into the urethra, advancing it about 7 to 8 inches or until resistance is felt.

(c) Continue to advance the catheter until urine begins to flow (about 2 to 3 inches further).

(d) Lower the penis and hold the catheter securely.



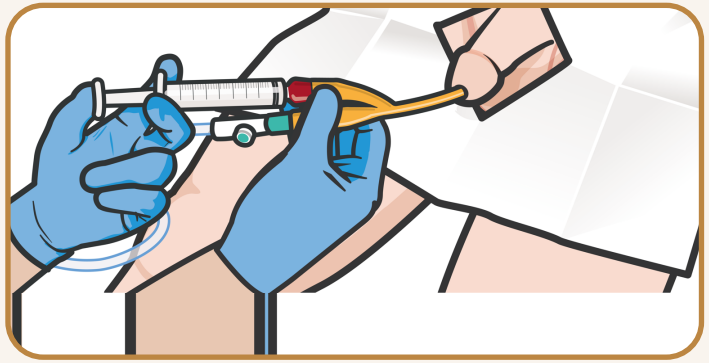
17

INFLATE the catheter balloon with the prefilled syringe of sterile water.

(a) Remove the syringe from the catheter by using a twisting motion.

(b) Gently pull back on the catheter until resistance is met to ensure that the balloon is fully inflated and seated in the bladder.

MALE FOLEY CATHETERIZATION

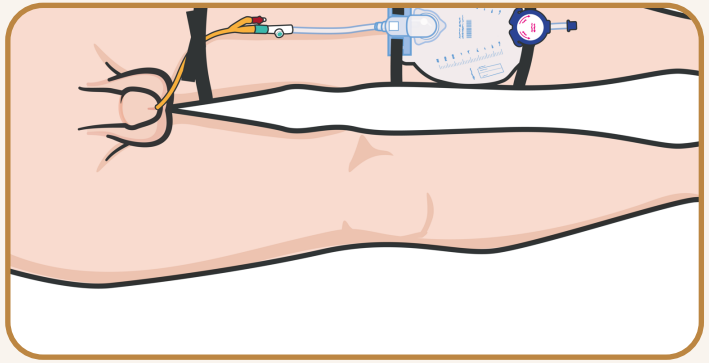


17 **INFLATE** the catheter balloon with the prefilled syringe of sterile water.

(a) Remove the syringe from the catheter by using a twisting motion.

(b) Gently pull back on the catheter until resistance is met to ensure that the balloon is fully inflated and seated in the bladder.

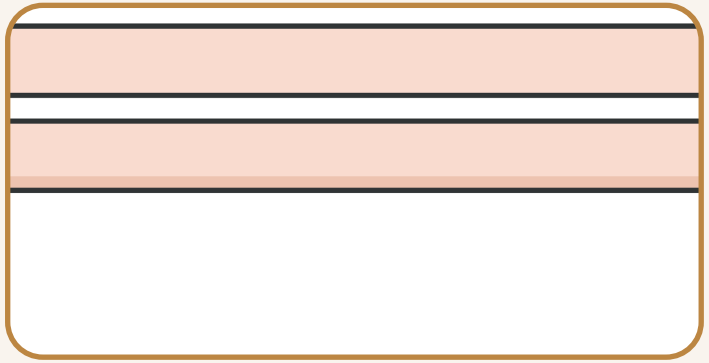
NOTE: If the balloon is difficult to inflate, advance the catheter another ½ to 1 inch to ensure that the catheter tip is fully within the bladder.



18 **REMOVE** the drapes.

19 **SECURE** the catheter to the inner thigh or stomach with tape.

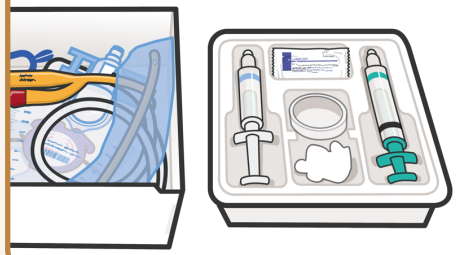
NOTE: The penis may be positioned up or down (facing the casualty's head or feet), depending upon the diagnosis and/or the casualty's comfort preference.



20 **ENSURE** the drainage bag is always kept lower than the casualty (especially during casualty movement) to allow free flow of urine into the drainage system.

CAUTION: If casualty is on a litter **DO NOT** secure the drainage system to the litter.

MALE FOLEY CATHETERIZATION

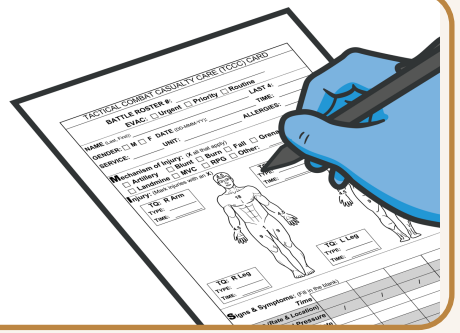


21

INSERT the of the used equipment and clean the area.

22

REPOSITION the casualty, as needed.



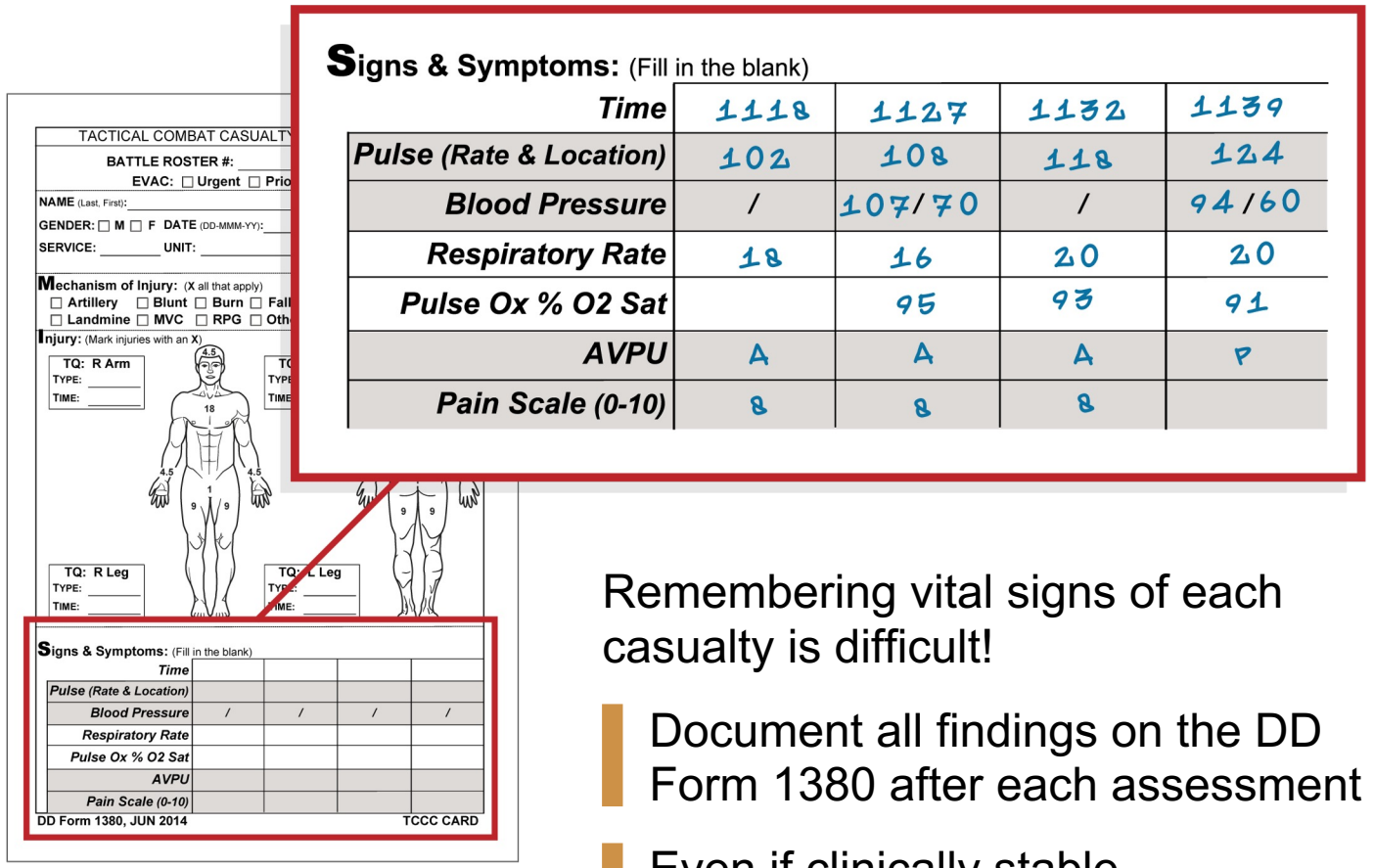
23

DOCUMENT all findings and treatments on a DD Form 1380 TCCC Card and attach to the casualty.

CASUALTY MONITORING SKILL STATION

- End-Tidal CO2 Colorimetric Devices
- End-Tidal CO2 Digital Devices
- Urinary Foley Catheterization
- Electronic Monitoring Devices

MONITORING VITAL SIGN TRENDS



Signs & Symptoms: (Fill in the blank)

Time	1118	1127	1132	1139
Pulse (Rate & Location)	102	108	118	124
Blood Pressure	/	107/70	/	94/60
Respiratory Rate	18	16	20	20
Pulse Ox % O2 Sat		95	93	91
AVPU	A	A	A	P
Pain Scale (0-10)	8	8	8	

Remembering vital signs of each casualty is difficult!

- Document all findings on the DD Form 1380 after each assessment
- Even if clinically stable, reassess routinely

Reasons for following trends in vital signs

- Provides insight into the casualty's clinical course not obvious from single set of vitals
- Helps responder identify need for early interventions or assessments
- Validates successful fluid resuscitation or other interventions

⚠ Vital signs are very important during transition of care to the medical evacuation team

EVIDENCE SUPPORTING MONITORING STRATEGIES

Subject Category	Study Types	Level of Evidence
Vitals – AVPU, Pulses, and Respiratory Rates	Prospective and Retrospective Observational Study	**B-NR**
Pulse Oximetry	Prospective and Retrospective Observational Study	**B-NR**
Colorimetric End-Tidal CO2 Monitoring	Prospective and Retrospective Observational Study	**B-NR**
Electronic Monitoring	Meta-analysis of Randomized and nonrandomized studies	**B-NR**
Foley Catheterization and Urine Output Monitoring	Prospective Observational Study	**B-NR**
Digital CO2 Monitoring	Meta-analysis of Randomized and nonrandomized studies	**B-NR**

ASSESSING THE EVIDENCE FOR GUIDELINES

Level of Evidence	AHA Recommendation System Terminology Explanation	Why the AHA Classification System?
A	Evidence from multiple randomized clinical trials (RCT) with concordant results or from **HIGH-QUALITY** meta-analyses.	• The level of evidence recommendations allow readers to quickly glean information on the strength, certainty, and quality of evidence supporting each recommendation. • A recommendation with Level of Evidence (LOE) C does not imply that the recommendation is weak. • Although, RCTs are unavailable, there may be a very clear clinical consensus that a particular test or therapy is useful or effective.
B-R	Evidence from moderate-quality trials, or a meta-analysis of moderate quality (RCT) followed by an R to denote **RANDOMIZED** studies	
B-NR	Evidence from moderate-quality trials, or a meta-analysis of moderate quality followed by NR to denote **NON-RANDOMIZED** studies	
C-LD	There is no convincing evidence and is followed by LD to indicate **LIMITED DATA**	
C-EO	There is no convincing evidence and is followed by EO if the consensus is based on **EXPERT OPINION**, case studies or standards of care.	

SUMMARY

Knowledge Topics

- Identify methods and limitations of assessing LOC, pulses, respiratory rate, and pulse oximetry
- Principles of foley catheterization and urinary output
- Following trends in vital signs

Skills and Abilities

- Application and use of colorimetric End-Tidal CO2
- Application and use of electronic vital signs monitoring devices
- Urinary foley catheter insertion

CHECK ON LEARNING

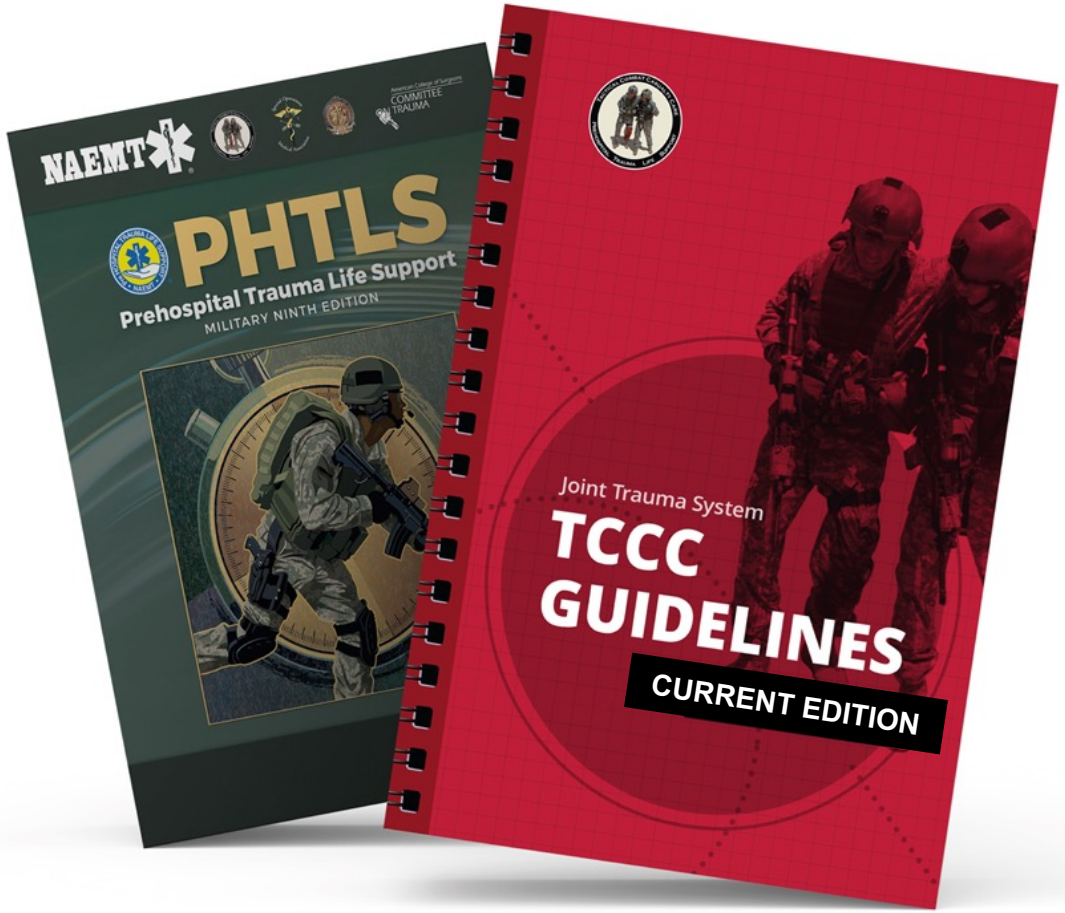
What does AVPU stand for?

Why do the TCCC Guidelines state that checking a radial pulse is critical?

What is the importance of following trends in vital signs?

ANY QUESTIONS?

REFERENCES



TCCC: Guidelines

by JTS/CoTCCC

These guidelines, updated regularly, are the result of decisions made by CoTCCC in exploring evidence-based research on best practices.

PHTLS: Military Edition, Chapter 25

by NAEMT

Prehospital Trauma Life Support (PHTLS), Military Edition, teaches and reinforces the principles of rapidly assessing a trauma patient using an orderly approach.