COVID-19 Post-Pandemic Guideline
EMS PPE & Aerosol Generating Procedures
EMSIPSB - Department of Health
September 2023 Guidelines (Supersedes April 2020 Guidelines)

The goal of this supplemental guideline is to promote optimal clinical care while simultaneously protecting patients, EMS medical providers, and the Hawaii community from preventable COVID-19 infections and other transmissible illnesses. These guidelines will continue to be adjusted to meet national and community standards.

1. Personal Protective Equipment (PPE): EMS personnel should wear appropriate PPE to all medical calls, following standard precautions.
    a. Mask and gloves should be worn to all medical calls.
    b. All patients >2 y/o (and EMS-transported family members/guardians/friends) may receive a surgical mask to decrease risks of SARS-CoV-2 transmission, if not deleterious to clinical care, resuscitation, or ability to maintain patent airway.
    c. If patient has a suspected or confirmed COVID-19 infection, other high-risk respiratory complaint, or clinical concerns for SARS-CoV-2, PPE protection should be upgraded to use of an N95 mask, eye protection, gown, and gloves.
    d. If other EMS personnel are within COVID-19 exposure range (<6ft), confined/closed space environment (e.g. Medevac, ambulance, fixed wing aircraft, etc.), or aerosol generating procedure is initiated, all exposed medical personnel (e.g. Pilot, prehospital fire teams, etc.) should be upgraded to use of an N95 mask, at a minimum, and, if possible, augmenting eye protection, gown, and gloves, as permitted by job responsibilities.

2. Oxygen Therapy: Oxygen administration is based on the patient's clinical presentation. Of note: silent hypoxemia is recognized in COVID-19 infection even prior to subjective complaints of shortness of breath.

3. Confined/Closed Space and/or Aerosol Generating Procedures: If the provider believes that intubation, supraglottic airway placement, nebulizer treatment, CPAP/BiPAP, high-flow oxygen therapy (>4L/min), or any other aerosol-generating procedure should not be delayed, the providers should endeavor to:
    1. Assure PPE protection for all personnel following the recommendations above.
    2. Consider completing the aerosol-generating procedure(s) prior to loading the patient into the transport vehicle.
    3. Maximize ventilation of enclosed spaces (e.g., Medevac, ambulance, etc.)

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Standing Orders Policy for Mobile Intensive Care Technicians

Adult & Pediatric Patients

September 2023

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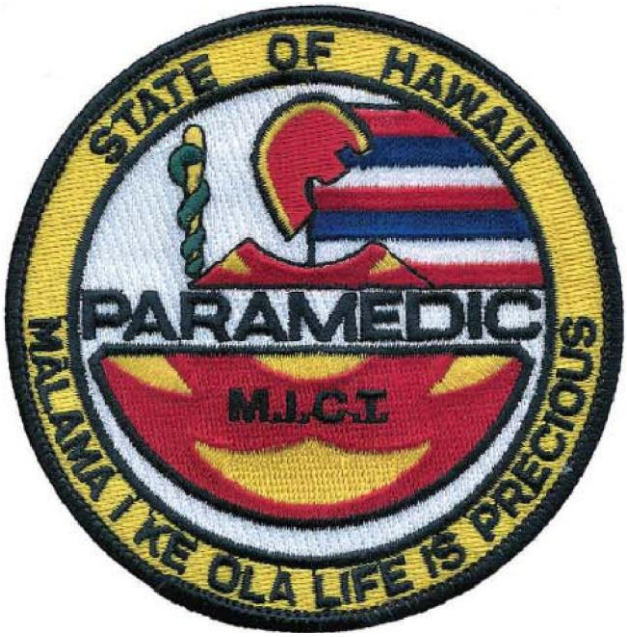
MOBILE INTENSIVE CARE TECHNICIAN

ADULT & PEDIATRIC STANDING ORDERS



September 2023

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Standing Orders

Policy for Paramedics and EMTs Adult & Pediatric Patients

September 2023

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AUTHORIZED EMS FORMULARY

Acetaminophen *(Elixir and Tablet)*
Adenosine
Albuterol *(Inhaler and Nebulizer)*
Amiodarone
Aspirin
Atropine
Atropine Auto Injector
Diphenhydramine *(Oral and Injectable)*
Calcium Gluconate
Cefazolin
Cephalexin
Dextrose D10%
Dextrose D25%
Dextrose D50%
Diazepam
Diazepam Auto Injector
Dopamine
Epinephrine 1:1,000
Epinephrine 1:10,000
Etomidate
Fentanyl
Glucagon
Glucose *(Oral)*
Hydroxocobalamin
Ipratropium
Nebulizer Dose Vial
Levalbuterol
Nebulizer (0.42%)
1.25mg per 3ml
Lidocaine 1%
Lidocaine 20%

Lorazepam
Magnesium
Sulfate
Midazolam
Morphine Sulfate
Naloxone
Nitroglycerin (Sublingual)
Norepinephrine
Ondansetron
Oxytocin
2-PAM/Pralidoxime Auto
Injector
Sodium Bicarbonate
Sodium Thiosulfate
Succinylcholine
Vinegar (Topical)

APPROVED MEDICAL ABBREVIATIONS

AAA	abdominal aortic aneurysm
ACLS	advanced cardiac life support
AHA	American Heart Association
ALS	advanced life support
AMS	altered mental status
APGAR	newborn evaluation score *(Appearance/Pulse/Grimace/ Activity/Respiration)*
ASAP	as soon as possible
AV	atrioventricular
BP	blood pressure
BVM	bag-valve-mask device
CCO	comfort care only
CHF	congestive heart failure
CPA	cardiopulmonary arrest
CPAP	continuous positive airway pressure

CPR	cardiopulmonary resuscitation
DNR	do not resuscitate
ECG	electrocardiogram
ED	emergency department
EKG	electrocardiogram
EMS	emergency medical services
ETA	estimated time of arrival
$EtCO_2$	end-tidal carbon dioxide
$ETCO_2$	continuous waveform capnography
ET	endotracheal
ETT	endotracheal tube
ga	gauge
GCS	Glasgow Coma Scale
GI	gastrointestinal
HP	high performance
HP-CPR	high performance cardiopulmonary resuscitation
HR	heart rate
IM	intramuscular

IN	intranasal
IO	intraosseous
IV	intravenous
LPM	liters per minute
MI	myocardial infarction
MICT	mobile intensive care technician
NALS	neonatal advanced life support
NRP	neonatal resuscitation program
NS	normal saline
NTG	nitroglycerin
ODT	orally dissolving tablet
O_2	oxygen
POLST	provider orders for life sustaining treatment
PALS	pediatric advanced life support
PATI	paralytic assisted tracheal intubation
PEA	pulseless electrical activity
PO	by mouth

PO_X	pulse oximetry
PPE	personal protective equipment
PVAD	pre-existing vascular access device
ROSC	return of spontaneous circulation
RR	respiratory rate
RSI	rapid sequence intubation
SBP	systolic blood pressure
SO	standing orders
SOB	shortness of breath
SGA	supraglottic airway
STEMI	ST-segment elevation myocardial infarction
TKO	to keep open
VF	ventricular fibrillation
VS	vital signs
VT	ventricular tachycardia

UNITS OF MEASURE		
bpm		beats per minute
cc		cubic centimeters
gm		gram
g/kg		gram per kilogram
kg		kilogram
mcg		microgram
mcg/kg		microgram per kilogram
mEq/kg		milliequivalent per kilogram
mg		milligram
mg/dL		milligram per deciliter
mg/kg		milligram per kilogram
mg/mL		milligram per milliliter
mL		milliliter
mL/kg		milliliter per kilogram
mm		millimeter
mmHg		mm of mercury (Torr)

GENERAL GUIDELINES

These Standing Orders shall allow paramedics to perform time sensitive procedures and treatments prior to communication with the Base Station Physician. Paramedics may, at their discretion, because of how ill a patient appears or because of mechanism of injury, administer oxygen, apply continuous cardiac monitoring, and establish prophylactic IV access with a saline lock or IV solution at TKO rate even if the circumstances are not covered in the following specific Standing Orders.

Besides the provision of treatment, paramedics and EMTs are also

expected to perform and document an appropriate assessment of the patient including a history and physical examination to the extent of their abilities. These should be done whenever possible and as appropriate to the situation.

These Standing Orders outline standard treatment guidelines for specific patient presentations. However, it is recognized that in some cases, it may be more appropriate for certain items within the orders to be done simultaneously, or in a different sequence (except for procedures that require a specific sequence of actions; e.g. RSI), or may possibly be deemed

unnecessary, based on the specific situation. It should also be remembered that prehospital care is often performed in a stressful environment with time critical decisions. Prehospital providers will use these Standing Orders and treatment protocols in conjunction with their training

and experience to do what they believe is best for the patient. It is likely that there will sometimes be circumstances that may arise which are not covered by these protocols. In those situations, providers shall function within their scope of practice and should use all available resources as appropriate, including on-line

medical consultation with the base station if needed, to provide the best possible patient care.

EMTs are authorized to initiate IVs and perform manual external defibrillation under the direction and personal supervision of a paramedic if the EMT has completed a State approved IV / Defibrillation course of training.

Whenever in doubt as to the next step in ongoing patient care, or if important information should be relayed to the Emergency Department:

COMMUNICATE WITH BASE STATION PHYSICIAN FOR FURTHER ORDERS

PART 1: PROCEDURES AND SKILLS

1-1. Continuous Positive Airway Pressure (CPAP)

Apply CPAP IF **ALL** of the following conditions below are present and there are no contraindications:

1) The patient is awake and can cooperate with CPAP;
2) CPAP mask fits the patient;
3) The patient is able to maintain an open airway;
4) The patient exhibits two or more of the following:
    a) Respiratory rate greater than 20 breaths per minute
    b) Oxygen saturation of less than 94% while on oxygen, or persistent dyspnea.
    c) Accessory muscles are used during

respiration

5) If CPAP fails, consider ET intubation, or do BVM / BVM with Supraglottic Airway (SGA).

Monitor O_2 saturation and continuous waveform $EtCO_2$, place on cardiac monitor, and establish IV access.

PART 1: PROCEDURES AND SKILLS

1-2. End Tidal Carbon Dioxide ($EtCO_2$)

Use continuous wave $EtCO_2$ with any critically ill patient, advanced airway or sepsis patients.

PART 1: PROCEDURES AND SKILLS

1-3. Intraosseous (IO) Vascular Access

IO can be used for critically ill patients with urgent need for an IV and no available veins for regular IV access. A careful skin prep is done and the proximal tibia is the preferred site for IO.

PART 1: PROCEDURES AND SKILLS

1-4. Oxygen Administration

The decision to administer oxygen shall be based upon the patient's presentation and guidelines below. Adjust the method of supplemental oxygen to the patient's needs:

1) No supplemental O_2 needed if:
    a) The patient has no complaint and no appearance of shortness of breath; and,
    b) Pulse oximetry "PO_x" shows an O2 saturation ≥ 94%.
2) A nasal cannula with O_2 at 2 LPM will be applied if:
    a) The patient has a complaint of SOB with no appearance of SOB; and,

b) PO_x shows an O_2 saturation of ≥ 94%.

3) A non-rebreather mask with O2 at 10-15 LPM (just enough flow to keep the reservoir inflated) will be applied if the patient has any of the following:
   a) Complaint of SOB
   b) Appearance of SOB;
   c) Altered mental status “AMS”;
   AND
   d) The POx shows an O2 saturation < 94%.
4) The oxygen regulator flow rates should not exceed 15 LPM. Higher LPM settings empty the oxygen tank faster with no treatment benefit.
5) Three diagnoses that are exceptions, that should all be given high flow 15 LPM O2:

a) Barotrauma / decompression sickness;
b) Suspected carbon monoxide poisoning; and,
c) Suspected cyanide exposure.

6) Bag Valve Mask “BVM” with O2 at no more and no less than 15 LPM will be used to assist/ventilate the patient if the patient has any of the following:
   a) Complaint of SOB;
   b) Appearance of SOB;
   c) AMS;

   AND

   d) Absent of inadequate ventilations

PART 1: PROCEDURES AND SKILLS

1-5. Pain Reduction

For traumatic injuries, burns, or other significant painful medical conditions, opioid medication may be used selectively and cautiously, with the goal of partial pain relief while avoiding over sedation, hypotension and respiratory depression. Use short acting opioids (e.g. fentanyl) to not obscure traumatic head injuries or neurologic conditions requiring serial mental status examinations.

In adult Cases (Age >14y/o AND Weight >50kg):

Administer oxygen [see 1-4. Oxygen Administration]

1) Establish normal saline IV at TKO rate.
2) If systolic BP is > 100 mm Hg, administer either:
    a) Fentanyl 50 mcg IV/IM (First line treatment); or
    b) Morphine Sulfate 2 mg IV/IM.

If systolic BP remains >100 mm Hg,

may repeat:

    a) Fentanyl 50 mcg IV (First line treatment)
    b) Morphine Sulfate 2 mg IV/IM.

In pediatric Cases (Age ≤ 14y/o) or any aged patient (Weight ≤ 50 kg):

Administer oxygen [see 1-4. Oxygen Administration]

1) Establish normal saline IV at TKO rate.
2) If systolic BP is >100 mm Hg, administer either:
    a) Fentanyl 0.5 mcg/kg IV/IM (max 50 mcg); or
    b) Fentanyl 0.75 mcg/kg IN (max 75 mcg).

If systolic BP remains > 100 mm Hg,

may repeat:

    a) Fentanyl 0.5 mcg/kg IV/IM (max 50 mcg); or
    b) Fentanyl 0.75mcg/kg IN (max 75 mcg).

For continued pain, communicate with base station physician for further analgesic orders.

Fentanyl is the preferred prehospital opioid analgesic agent. It has a shorter half-life, induces less histamine release, and hypotension than morphine sulfate.

Promoting a greater degree of hemodynamic stability and prompts clinical reassessments.

If the patient develops altered mental status and respiratory depression, consistent with opioid toxidrome, support respiration as needed attempting to avoid full reversal with Naloxone. If necessary, give Naloxone 0.5 mg IV and repeat as needed to a total dose of 2 mg titrating to

adequate ventilation of patient. If the IV has been lost, administer Naloxone 2 mg IN using an atomizer or mister device. Higher concentration Naloxone is indicated when administering via IN route.

PART 1: PROCEDURES AND SKILLS

1-6. Rapid Sequence Intubation "RSI" or Paralytic Assisted Tracheal Intubation "PATI"

1-6-a. Indications

1) Inability to maintain oxygen saturation > 90% by any other more conventional means;
2) Inadequate ventilation; and
3) Unable to protect airway.

As much as possible, pre-oxygenation should be attempted pre-RSI, by administering high flow O2 by mask, and also by doing **apneic oxygenation** via nasal prongs at 15 LPM before and during RSI.

1-6-b. Preparation

1) Start / increase pre-oxygenation
2) Assure suction is available and set up.
3) Establish and secure an IV or an IO.
4) Place cardiac monitor and PO_x on patient.
5) Prepare waveform capnography.
6) Ready intubation equipment and supplies
7) Setup alternate airway adjuncts: SGA and BVM
8) Restrain patient, as appropriate.

1-6-c. Medication and RSI

Perform these steps, in this order

1) Preoxygenate.
2) Administer Etomidate 0.3 mg/kg up to a max dose of 30 mg IV/IO.
3) If Etomidate is not available, give Midazolam 0.1 mg/kg up to a maximum single dose of 10 mg IV/IO.
4) You may repeat the Midazolam 0.1 mg/kg if it is needed to a maximum total dose of 0.3 mg/kg.
   Support ventilation to the extent needed after giving sedation, using BVM with attached supplemental high flow O_2.
5) Administer Succinylcholine 2 mg/kg IV/IO up to a maximum single dose of 200 mg.
6) Apply backward, upward, rightward

pressure to larynx (BURP maneuver) to facilitate intubation.

7) Intubate and assess ET tube placement.
8) Secure ET tube position and reassess tube placement.
9) Monitor continuous waveform capnography/$EtCO_2$ to ensure ongoing correct tube placement.
10) Post-intubation discomfort medication: Fentanyl adjunctively post-intubation 50mcg IV.
11) Any sedation should be administered by slow IV push.
12) Administer additional Midazolam, or add Midazolam after Etomidate, as needed for continued patient sedation up to a total of 0.3 mg/kg
13) If relaxation is inadequate to allow intubation after 1-2

minutes, recheck IV quality. If needed, start a new IV/IO, then repeat the same dose of Succinylcholine and sedation, and re-attempt tracheal intubation.

14) If unable to intubate the paralyzed patient, insert SGA.
15) If unable to insert SGA, use BVM assisted ventilation with maximal attention to technique.
16) Ventilation optimal rates: When bagging the intubated patient and/or setting the ventilator rate, consider the clinical situation pre-intubation and pick a respiratory rate that is appropriate.

a) Normal = 12 /minute with a tidal volume of 8 cc/kg;
b) Asthma = Slow, 8 /minute with a tidal volume of 6 cc/kg; and,
c) Acidosis = Fast, 20 /minute with a tidal volume of 8 cc/kg

PART 1: PROCEDURES AND SKILLS

1-7. Shock / Hypovolemia

For systolic BP < 90 mmHg which is considered to be secondary to hypovolemia:

1) Administer supplemental oxygen as needed, [see 1-4. Oxygen Administration]
2) Establish IV access with Normal Saline "NS" and infuse at a rapid rate.
3) If unable to start IV within 2 minutes, you may choose to obtain vascular access by IO
4) Do not delay transport
5) Establish second vascular access with NS while en-route: Infuse NS at a rapid rate until the BP is ≥ 90 mmHg systolic (110 if a severe head injury is also present), then reduce to a TKO rate

and monitor VS

6) If BP does not improve check for signs of a cardiogenic cause on the ECG monitor, or signs of obstructive shock such as neck vein distention and if these signs are present, reduce IV/IO infusion rate to TKO

PART 1: PROCEDURES AND SKILLS

1-8. Spinal Motion Restriction

Consider immobilizing a patient with a significant mechanism of injury if:

1) Decreased alertness: Any alteration in mental status? GCS < 15?
2) Intoxication: Any evidence of alcohol or drug intoxication?
3) Neuro exam: Any focal motor or sensory deficit? Any transient deficit that has resolved?
4) Distracting injuries: Any painful injury that might distract the patient from the pain of a spinal injury?
5) Exam: Any tenderness or pain over the midline of the cervical spine?

6) Extremes of age: be extra cautious in those patients younger than 5 years or older than 65 years.

Apply a cervical collar and perform spinal motion restriction as below:

1) Spinal motion restriction should be considered for any patient who has been subjected to mechanisms of injury that have a high index of suspicion for cervical, thoracic, lumbar or spinal cord injury.
2) Firmly secure the torso to EMS stretcher or conforming device (e.g., vacuum splint).
3) Use of hard surface backboard should be avoided, but may be considered for cases in which:
    a) The backboard is used for

extrication from a scene / vehicle, but it should be removed after the patient is placed on the EMS stretcher.

b) Removal of the backboard would delay the transport of a critical patient

c) The backboard is needed for CPR chest compressions.

PART 1: PROCEDURES AND SKILLS

1-9. Taser Dart Removal

Consider scene safety and medic safety, even with police present. The patient with embedded darts is at high risk for AMS, and for having injuries from an altercation or from a Taser-related fall. The darts are removed with a quick pull, the puncture wounds cleaned with alcohol and covered with band-aids. Do and document a good overall exam for injuries, ventilation, and mental status. Consider transporting the patient to ED for dart removal with darts embedded in eye, face, neck or genitals.

PART 1: PROCEDURES AND SKILLS

1-10. Termination of Resuscitation

Cardiac Arrest

1) The case should be considered for Termination of Resuscitation if cardiac arrest patient meets ALL of:
   - Received ALS resuscitation for ≥ 20 minutes and remains in an unshockable rhythm,
   - No Return of Spontaneous Circulation (ROSC),
   - > 18 years old
   - Initial rhythm is asystole or PEA, confirmed in two leads on a printed rhythm strip
   - No defibrillation has been performed
   - EMS does not witness the

arrest

- An airway is confirmed by digital waveform capnography,
- Quantitative end-tidal CO2 (ETCO2) value is less than 10 mmHg despite effective CPR

2) Consider transporting patients when there are concerns for scene safety, provider safety, or if the scene is in a very public place.

Traumatic Cardiac Arrest

1) Strongly consider Withholding Resuscitation or Termination of Resuscitation in patients:
   - Where injuries are incompatible with life, such

as decapitation or hemicorporectomy

- For patients with blunt or penetrating trauma where there is evidence of prolonged cardiac arrest, including dependent lividity and rigor mortis cardiac arrest, including dependent lividity and rigor mortis
- For patients with blunt trauma who, on the arrival of EMS personnel, are found to be apneic, pulseless, and without organized cardiac activity.
- For patients with penetrating trauma who, on the arrival of EMS personnel, is found to be pulseless and apneic and

there are no other signs of life, including spontaneous movement, electrocardiographic activity, and pupillary response.

2) Consider transporting patients when there are concerns for scene safety, provider safety, or if the scene is in a very public place.
3) Also consider transporting patients in PEA when faint pulse may be present, or complete absence of pulse cannot be determined, as this may represent ROSC with very weak pulses.

PART 1: PROCEDURES AND SKILLS

1-11. Needle Thoracostomy

For patients undergoing traumatic cardiac arrest or tension pneumothorax.

1) Suspect tension pneumothorax in the patient who has decreased breath sounds unilaterally or throughout the lungs and persistent hypotension and/or hypoxia with poor lung compliance. Particularly at risk are patients with severe blunt trauma or penetrating trauma to the chest or abdomen who are receiving positive pressure ventilation. Note that additional signs of tension pneumothorax such as tracheal deviation and subcutaneous emphysema may be absent. Establish an IV access and provide high flow

oxygen.

2) Consider diagnostic mimics like improper endotracheal tube placement (ETT too deep) and hemothorax. Also consider your ETA to the ED, and time to communicate a possible diagnosis and trauma activation alert to the ED.
3) If the oxygen saturation cannot be maintained above 90% and there is either BP ≤ 80 mmHg systolic (impending cardiac arrest) or PEA then perform a needle thoracostomy to decompress the suspected tension pneumothorax.
4) Do this at the anterior axillary line at the 5th intercostal space. This may be located by placing the palm of the patient's hand firmly in the axillary crease (armpit handshake). The lower

border of the hand should be at the 5th intercostal space. This corresponds to the nipple level in men and the inframammary crease in women. If unable to utilize the axillary site, the midclavicular line at the 2nd intercostal space may be utilized

5) Use a special long and large catheter: 14 ga X 3 ¼" length.
6) Insert the needle into the chest wall perpendicular to the rib. Once the needle contacts the rib, then direct the needle over the rib into the target interspace.
7) Leave the catheter in place.
8) Post procedure: recheck VS, lung sounds, PO_x, and then report any changes to the ED.

PART 1: PROCEDURES AND SKILLS

1-12. Transport Interfacility

A paramedic will accept an order to transfer a patient by 911 ambulance from one medical facility to another (whether directly or as a segment of an air ambulance transfer) if **ALL** of the following conditions are met:

1) The order comes from a Hawaii Base Station Physician, on duty in the ambulance service region;
2) The paramedic is adequately informed of the patient's diagnosis, condition, medications, allergies, and expected course during ambulance transport;
3) Also important to know is the patient's Provider Orders for Life-Sustaining Treatment / POLST / Comfort Care Only /CCO / Do Not Resuscitate / DNR

status; and,

4) There is an accepting physician at the destination facility agrees to receive the patient.

A request from a non-hospital medical facility should be treated as a 911 ambulance call rather than as an interfacility transfer. The paramedic may use Standing Orders during transfer, if indicated, and shall communicate with the receiving hospital if he / she does this.

PART 1: PROCEDURES AND SKILLS

1-13. Trauma / Bleeding Control

1) Extremity wounds
    a) Apply direct pressure using a gloved hand or finger and very little gauze.
    b) If direct pressure does not control the bleeding within 1-2 minutes, proceed quickly to a tourniquet (commercial tourniquet preferred).
    c) Tourniquet should be placed proximally on the thigh or upper arm.
    d) If 1st tourniquet does not stop the bleeding, apply an additional tourniquet close to the first one (proximally, if possible).
2) Wounds outside the chest and

abdominal cavities (i.e., in the axilla or groin): do direct pressure first, then consider packing the wound by layering a roll of gauze into the wound, followed by application of direct pressure over the wound packing.

PART 1: PROCEDURES AND SKILLS

1-14. Documentation Protocol for a **Patient's Refusal to Transport**: See Appendices

PART 1: PROCEDURES AND SKILLS

1-15. Open Fracture / Major Traumatic Wounds: Prophylactic Intravenous Cefazolin Therapy

1) Indications: for patients suffering:
    a) Open extremity fracture (indicated by visual bone) OR
    b) Amputation proximal to the hand or foot OR
    c) Major soft tissue injury exemplified by:
        i) Exposed tendon
        ii) Exposed bone
        iii) Large, deep tissue laceration or avulsion
        iv) Evisceration
        v) Major open crush injury
        vi) Large visibly contaminated

wounds (NOT to include isolated stab or gunshot wounds, routine "road rash," or minor abrasions).

AND

2) Contraindications: Patient assured NOT to have:
   a) Known penicillin or cephalosporin (cefazolin) allergy AND
   b) Other life threats not yet clinically addressed AND
   c) Inadequate time to administer
3) For patients who meet one or more indications (above) and do not meet any contraindications (above): Establish IV access and deliver intravenous cefazolin via the dosing and administration parameters indicated below.
4) Time of medication administration is particularly important and MUST be documented clearly on the patient chart

and verbally reported to receiving facility upon transfer of care.

Dosing and Administration:

- Patient weight ≥ 40 kg, Cefazolin 2G IV/IO over 1-2 minutes
- Patient weight ≤ 40 kg, Cefazolin 50 mg/kg IV/IO over 1-2 minutes; round dose to nearest 100 mg
  Note: Reconstitute 1 G per 10 cc Sterile Water for injection (preferred) or Normal Saline

PART 2: ADULT STANDING ORDERS

2-1. Cardiovascular

Most Cardiology topics will be managed according to the latest version of the AHA/ACLS Textbook and algorithms. Check them for current details.

2-1-a. Cardiac Arrest

Patients will be managed with ACLS and special attention to consistently doing High Performance CPR (**HP-CPR**), including:

1) Begin Chest Compressions
    a) Rate of 110/minute (use a metronome timer if available)
    b) Depth of 2 – 2.5 inches = 5 – 6 cm ("push hard")
    c) Change compressors at least every 1 – 2 minutes
    d) Continuous chest compressions /

minimal interruptions

2) Apply AED or Defibrillator / Monitor, then shock if a shockable rhythm or when advised by AED
3) BVM
    a) Intersperse one breath every 10 chest compressions
    b) Avoid over ventilation (10-12 breaths per minute, 6 – 8 cc/kg)
    c) ET intubation only if able to do so without interrupting chest compressions for more than 3 – 5 seconds
    d) ET intubation only if there are enough personnel to perform chest compressions and BVM properly
    e) Other options include supraglottic airway devices
    f) Do ALS when there are adequate

stagging resources / personnel to provide chest compressions and ventilations properly, and then do ACLS per AHA current Guidelines

4) HP – CPR Goals:
    a) Maximize time spent on quality chest compressions (a goal is > 90% of the time). Minimize pauses and interruptions.
    b) Pauses for no more than a few seconds including for IV access and for inserting airway devices.
    c) If patient meets criteria for death, has a valid POLST form or a CCO DNR bracelet or pendent, then do not initiate HP CPR unless other circumstances warrant it.
5) Post CPA successful resuscitation cases are very unstable, and the Paramedic should be vigilant for recurrent VT /

VF, and ensure adequate manpower in the ambulance before transporting.

6) Termination of Resuscitation: Field pronouncements and avoiding futile transports of clinically dead CPA cases [see 1-10. Termination of Resuscitation]

PART 2: ADULT STANDING ORDERS
2-1 Cardiovascular

2-1-b. Chest Pain

For ongoing or recent chest discomfort suggestive of myocardial ischemia:

1) Administer O_2 [see 1-4. Oxygen Administration]. No supplemental O_2 is used if PO_X is ≥ 94%.
2) If pain persists, BP > 100 mmHg systolic and there are no contraindications, administer nitroglycerin "NTG" 0.4 mg sublingual spray or tablet. Contraindications include the recent use of drugs for erectile dysfunction or pulmonary hypertension (generic names end in "afil") or evidence of right ventricular infarction such as an inferior myocardial infarction with

hypotension. May repeat NTG every 5 minutes if BP remains > 100 mmHg systolic.

3) Obtain 12-lead ECG. If significant ST elevations are present, notify receiving hospital as soon as possible, using the phrase “STEMI Alert”. Transport to the closest appropriate hospital, preferably one with percutaneous coronary intervention / PCI capability.
4) Whether pain persists or has resolved, administer aspirin 325 mg orally if the patient has no history of allergic reaction to aspirin. If the patient has a recent history of gastrointestinal bleeding contact the base station physician before administering aspirin.
5) Establish IV with NS at TKO rate.
6) If chest pain is unrelieved by 3 doses of NTG, communicate for additional

orders.

PART 2: ADULT STANDING ORDERS

2-1 Cardiovascular

2-1-c. Heart Failure and Pulmonary Edema

For patients with dyspnea and rales present in both lungs, with absence of fever (<100^{o}F) then:

1) Administer O_2 [see 1-4. Oxygen Administration]
2) Apply continuous positive airway pressure [see 1-1. Continuous Positive Airway Pressure (CPAP)]
3) Establish IV at TKO rate
4) If BP < 90 mmHg systolic, give norepinephrine 4-12 mcg per minute via automatic IV infusion pump, adjusted to maintain systolic BP of 100 - 110 mmHg. To do this, put 4 mg into 500 ml of NS (= 8 mcg/ ml). Start the

infusion at 0.5 ml/min (4 mg/min), and titrate rate to get desired BP ≥ 100-110 mmHg systolic

PART 2: ADULT STANDING ORDERS
2-1 Cardiovascular

2-1-d. Dysrhythmias

For all bradycardia / tachycardia / PEA / asystole patients, see the current AHA ACLS guidelines and algorithms.

PART 2: ADULT STANDING ORDERS
2-1 Cardiovascular

2-1-e. CPA in Renal Dialysis Patient

Because a renal dialysis patient in CPA (of any type) can have profound hyperkalemia, administer these medications as soon as the IV has been established. These medications are in addition to any other applicable SO. These orders should be carried out whether or not the patient has had a recent dialysis.

1) Calcium gluconate 10% solution, give 10 ml IV/IO push.
2) Flush IV/IO line thoroughly.
3) Sodium bicarbonate 1 mEq/kg IV/IO push.
4) If no change, flush IV line thoroughly and repeat steps 1-3, again.

CONTINUE CARDIAC ARREST STANDING ORDERS

PART 2: ADULT STANDING ORDERS
2-2 Central Nervous System

2-2-a. Altered Mental Status

1) Check respiratory status and PO_x.
2) Check blood glucose: if < 70 mg/dl treat as directed in Hypoglycemia SO
3) If blood glucose ≥ 70 mg/dl and PO_X < 94% on supplemental O_2, or respiratory rate ≤ 6 per minute, then support respiration as needed.
4) If the patient seems to be over sedated administer naloxone 0.4 – 2 mg intranasal "IN"/IV/IO. May repeat doses as needed, titrating initially, then larger doses until respiratory status improved.
5) If the history and physical exam suggest a probable fentanyl or

carfentanyl overdose, consider giving higher dose of naloxone, until a total dose of ≥ 8 + mg has been given.

6) When giving naloxone IN, you must use the 1 mg/ml (stronger concentration) vials or the special new 4 mg/0.1 ml per nostril mister device.
7) If patient is not improved and no IV is available, give naloxone 2 mg IM

PART 2: ADULT STANDING ORDERS
2-2 Central Nervous System

2-2-b. Severe Agitation/Altered/Combative

1) For patients with altered mental status and severe agitation placing themselves or providers in imminent danger and no other means are available for safe assessment, treatment, and transport.
2) Assess and establish scene safety while evaluating if transport is essential. Patients with altered mental status require medical evaluation if they lack capacity for decision making and/or if they present danger to self or others.
3) Attempt verbal de-escalation. If de-escalation fails to allow safe

evaluation/transport of patients and in cases where the patient poses a threat to themselves, the public, or emergency responders, strongly consider involvement of law enforcement officers.

a) If the EMS providers are in danger of harm, they should retreat to a safe place and await the arrival of law enforcement. If the patient is at risk of danger to themselves, the public or emergency responders, providers may attempt to restrain the patient to ensure safety during the intervention. If the patient is physically restrained, they must be restrained in a supine position without inhibition of breathing and ventilation.

4) For acute agitation, administer:
    a) Midazolam 5mg intramuscular (IM)
    OR
    b) Midazolam 5 mg intranasal (IN) using 5 mg/ml concentration only. Administer half the dose into each nostril using a mucosal atomizer device. IM and IN are equally effective.
    OR
    c) Midazolam 2 mg intravenous (IV)
5) Establish IV with NS at TKO rate.
6) Place patient on cardiac monitor.
7) Place PO_X and continuous wave capnography "$ETCO_2$". Monitor for Laryngospasm and support with suction and BVM as needed.
    a) Be prepared to support airway and breathing with O_2 [see 1-4

Oxygen Administration]

8) Check glucose and treat as needed.
9) Check temperature. Patient is at high risk for severe hyperthermia. Cool patient as needed.
10) Ten minutes after administration of Midazolam reassess patient. If patient continues to be severely agitated posing threat of harm to self or providers and does not respond to verbal de-escalation consider administration of a second dose of Midazolam IM, IN or IV at or half of the first dose of Midazolam.
11) Contact and report to base station requesting any additional orders.
12) If Midazolam is unavailable, substitute with:
    a) Lorazepam 2 mg IM or IV for and initial dose.

b) Diazepam 5 mg IV or IM (slowly absorbed IM) for an initial dose.

Call for further orders if additional sedation is still needed.

PART 2: ADULT STANDING ORDERS
2-2 Central Nervous System

2-2-c. Seizures and Status Epilepticus

Continuous generalized seizures or repeated seizures without return to consciousness.

1) Administer O_2 [see 1-4. Oxygen Administration]
2) Check blood glucose [see 2-6 Metabolic]
3) If seizure has lasted more than 5 minutes since it began, administer midazolam 10 mg IN or IM. You must use midazolam 5 mg/ml (stronger concentration) when administering by the IN route. Administer half the total dose in each nostril using a mucosal atomizer device. If midazolam is not available, go directly to the next

paragraph to start the IV and give diazepam IV without any delay.

4) If seizure activity does not stop in 2 minutes, establish IV with NS at TKO rate. Administer diazepam 5 mg slow IV push. This dose of IV diazepam may be repeated once if seizure activity does not stop after an additional 2 minutes. If seizure continues more than 5 minutes after the 2nd diazepam IV dose, call for further orders.
5) Monitor oxygenation and be prepared to support airway.
6) If diazepam for IV use is unavailable, substitute with one of these:
    a) Lorazepam 2 mg IV for an initial dose. If seizure activity does not stop in 2 minutes, repeat dose once. If seizure continues more than 5 minutes after the 2nd

lorazepam dose call the base station physician for further orders.

OR USE

b) Midazolam 2 mg IV for an initial dose. If seizure activity does not stop in 2 minutes, repeat once. If seizure continues more than 5 minutes after the 2nd midazolam dose call the base station physician for further orders.

7) Monitor respiratory status and support as needed. Avoid intubation if PO_X can be maintained above 90% with supplemental O_2.

PART 2: ADULT STANDING ORDERS
2-2 Central Nervous System

2-2-d. Stroke

1) If a stroke or Cerebral Vascular Accident / CVA is suspected, find specific new focal neuro deficits, use the LA Prehospital Stroke Scale/ LAPSS and get information from family / caregivers. Try for minimal scene time and bring a family member or another reliable historian in the ambulance, if possible. Go to the closest hospital appropriate for CVAs.
2) Check glucose, start IV and cardiac monitor.
3) Get the time of onset of the event, or a best estimate of this event time from family members, or the time the patient was last seen to be normal.

4) The MICT or the EMT should do a brief early communication for any possible stroke, and if the physical exam indicates this, include the attention getting phrase “Stroke Code: LAPSS Positive” with the above information.
5) The MICT on arrival in the hospital ED will state that they have a patient with “Stroke Code: LAPSS Positive” to encourage quick evaluation.

PART 2: ADULT STANDING ORDERS
2-3 Environmental

2-3-a. Allergic Reactions
Minor

Administer diphenhydramine 25 – 50 mg PO/IV/IM

Major / Anaphylaxis

1) Administer O_2 [see 1-4. Oxygen Administration
2) Administer epinephrine 1:1,000 (1 mg/1 ml) 0.3 mg (0.3 ml) IM
3) Establish IV and give 250 ml NS by rapid infusion as needed to maintain systolic BP > 90 mmHg.
4) In case of wheezing or respiratory distress administer aerosolized

albuterol 5 mg with ipratropium 0.5 mg and repeat nebulizer treatment if needed.

   a. If albuterol unavailable use levalbuterol 2.5 mg.

5) If patient persistently hypotensive continue IV NS bolus. If unable to establish IV the establish IO access.
6) If patient remains in critical condition, administer epinephrine IV or IO at 0.1 mg increments titrated up to 0.5 mg. For accurate dosing, use the dilute formulation 1:10,000 which is 0.1 mg/ml. Have the IV running briskly, and give the IV epinephrine dose slowly, over 1-2 minutes.
7) Monitor cardiac monitor and VS
8) If no IV or IO access available repeat epinephrine (1:1,000) at dose of 0.3 mg (0.3 ml) IM 5 minutes after 1st

dose, if still hypotensive in shock.

9) Administer diphenhydramine 25 mg IV. Repeat if needed in 10 minutes. If IV is unavailable administer diphenhydramine 50 mg IM.

PART 2: ADULT STANDING ORDERS
2-2 Central Nervous System

2-3-b. Burns

Types: thermal, electrical, chemical, and radiation

1) General considerations: Monitor airway and support as needed. If there is no indication for intubation, administer oxygen [see 1-4. Oxygen Administration]. Use high flow at 15 liters for suspected cyanide or carbon monoxide.
2) Establish IV with Normal Saline. If the burn is second or third degree and involves more than 15% of the patient's total body surface area, administer a 500 ml NS fluid bolus.
3) Remove rings, bracelets, and other

constricting items.

4) Treat the patient's pain per the pain reduction [see 1-5 Pain Reduction].
5) Cover the burn with dry sheet or dressing. If the burn surface area is less than 15%, then a wet or cold water-soaked dressing may be used for pain relief. Avoid direct contact of ice with burned area.

Burns: Special Considerations:

1) Chemical Burn:
    a) Dust off chemical, remove clothing, irrigate wound with NS.
    b) For Eye exposure irrigate with NS for 15 minutes.
2) Electrical Burn:
    a) Do not contact patient until source of electrical shock is safely

removed.

b) Monitor cardiac rhythm
c) Obtain history of the nature of electrical source (AC/DC), voltage, and amperage.

3) Radiation Burns – are possible from industrial or medical radiation sources.
   a) Consider scene safety, and involving the County HazMat Team
   b) The person harmed by radiation is not likely be an ongoing source of radiation dangerous to others.

PART 2: ADULT STANDING ORDERS
2-3 Environmental

2-3-c. Drowning

1) Administer oxygen per [see 1-4. Oxygen Administration]. Early, optimized and continuous respiratory support is our most important action in this diagnosis.
2) Start an IV.
3) For wheezing, [see 2-8-b. Bronchospasm].
4) If indicated, apply Continuous Positive Airway Pressure (CPAP) [see 1-1. Continuous Positive Airway Pressure]

PART 2: ADULT STANDING ORDERS
2-3 Environmental

2-3-d. Heat Illness

1) **HEAT EXHAUSTION** (= **NO** mental status change)
    a) Remove patient from hot environment and remove outer layers of clothing
    b) Check VS / Temperature (core Temp if possible)
    c) Cool body with ice packs (to groin, axilla, and neck), wet cool towels, evaporate cooling with air conditioning and fans, but avoid making patient shiver.
    d) Cardiac monitor
    e) Check Glucose and treat as needed
    f) IV NS (250 ml boluses, repeat as

needed up to 2 L) for rehydration if indicated.

2) **HEAT STROKE** (= **with** mental status change)
   a) Heat stroke is a time sensitive, life threatening condition involving hyperthermia
   b) Measure Temp – a core temp is preferable
   c) **COOL the patient as quickly as possible** to ≤102°F. (This may require staying at the scene to achieve rapid cooling).
      i. If patient is in ice water bath immersion, let patient remain there for a few minutes until AMS improves and/or core temp is ≤102°F (avoid causing hypothermia). This will likely take approx. 5-

8 minutes total time in ice bath immersion. Ice bath immersion is the fastest, most efficient way to rapidly cool a pt.

ii. If no ice water bath immersion is available, cool patient with ice packs, and also use wet towels to head, torso, arms, legs with evaporative cooling methods [see 2-3-d. Heat Illness].

iii. IV NS giving NS 250 ml boluses up to 2 L, if not contraindicated

iv. Apply cardiac monitor—watch for arrhythmias

v. Check Glucose and treat as needed

vi. Watch for seizures and if needed [see 2-2-c. Seizures and Status Epilepticus]
vii. Notify receiving hospital early

PART 2: ADULT STANDING ORDERS
2-3 Environmental

2-3-e. SCUBA Diving Injuries / Decompression Sickness + Barotrauma

If the patient breathed underwater, and may have a diving injury (air embolism / barotrauma / decompression sickness) then:

1) Put the patient on high flow 15 LPM NRB mask oxygen and start an IV TKO
2) Manage the airway, examine the patient and look for other serious illnesses (aspiration, STEMI, trauma, etc.)
3) To get a reliable dive history, if possible bring along with the patient their dive computer (with

regulator, if connected) and their dive buddy, or dive master (or their cell phone numbers).

4) Early communication with the receiving Emergency Department to discuss the case, including a possible IV fluid challenge.
5) All patient transfers done by aircraft should be done at low altitude / sea level cabin pressure.

PART 2: ADULT STANDING ORDERS
2-4 Gastrointestinal

2-4-a. Abdominal Pain / GI Bleed

1) For patients with possible large GI bleeds or AAA consider starting two large bore IV lines
2) For epigastric area pain consider doing an EKG.
3) IV pain management should be done only if needed, after a detailed communication to MD.

PART 2: ADULT STANDING ORDERS
2-4 Gastrointestinal

2-4-b. Severe Vomiting

1) Choose either oral or intravenous route for treatment. For oral treatment, administer ondansetron 4 mg sublingual. Repeat once if needed after 5 minutes.
2) For intravenous treatment, establish IV NS at TKO rate. Administer ondansetron 4 mg slowly IV, over 2 min. May repeat 4 mg IV once after 5 minutes.
3) Apply cardiac monitor and pulse oximeter, and evaluate patient for possible cardiac or other serious causes of vomiting.

PART 2: ADULT STANDING ORDERS
2-5 Infectious

2-5-a. General Infectious Disease Guidelines

For patients transported with suspected infectious diseases and a recent travel history, early notification of the receiving hospital is important so that appropriate isolation precautions may be prepared.

Use of appropriate Personal Protective Equipment and following infectious disease protocols will help protect EMS providers and their subsequent contacts from infections. These precautions include:

1) Routine use of gloves, and frequent

hand washing.

2) Use of anti-bacterial hand cleansers before and after patient contact.
3) Avoidance of contact of hands to face.
4) Barrier protection from bodily fluids (gloves, gowns, boot covers).
5) Careful removal of protective equipment is necessary to minimize infection risk after patient contact.
6) Eye protection from fluids or droplets.
7) Mouth and nose protection from inhaled pathogens (surgical mask on patient, N-95 mask on EMS provider).
8) Personal immunization for healthcare workers against appropriate infectious diseases is highly recommended.

PART 2: ADULT STANDING ORDERS
2-5 Infectious

2-5-b. Sepsis

1) If the patient is suspected of having an infection, with ≥ 2 of these:
    a) HR > 100 bpm
    b) Temp > 100°F or rigors (shaking chills)
    c) SBP < 100 mmHg
    d) RR > 20 per minute
    e) Altered Mental Status / Delirium / Confusion / Agitation
2) Then sepsis is possible and you should:
    a) Supplemental oxygen to O_2 sat = 95-98%
    b) IV NS 15 cc/kg up to a 1 liter bolus. This may be repeated

once if SBP remains < 90 mmHg systolic.

c) Monitor vitals, and recheck lung sounds after every 500 cc of fluid infusion.
d) $ETCO_2$ monitoring

3) Does the patient have any one (1) of the following toxic signs?
   a) HR > 130 bpm
   b) SBP < 90 mmHg
   c) RR > 30 per minute
   d) $ETCO_2 \leq 25$ mmHg
4) Then Severe Sepsis or Septic Shock is likely. Mortality Risk 20 – 50%, and you should:
   a) Give IV NS 30 cc/kg or up to 2 liters total.
   b) Notify receiving ED of suspected septic shock so they can prepare for blood cultures

and antibiotics on arrival.

PART 2: ADULT STANDING ORDERS
2-6 Metabolic

2-6-a. Hypoglycemia / Insulin Reaction

Check blood glucose. If blood glucose reading < 70 mg/dI perform the following steps:

1) If patient is alert and able to swallow and maintain their airway, administer oral glucose preparation approximately 12 – 30 grams PO *. Go to step 4 below.
2) If patient is not alert or is not able to swallow and protect their airway, start IV NS at TKO rate and give glucose 12.5 gm IV (25 ml of 50% dextrose solution **)
3) If unable to start IV, give glucagon 1 mg IM.

4) Recheck blood glucose. Treat as needed

*Oral glucose preparations are commonly available ranging from 4 gm tablets to 15 gm of gel, as a single unit dose or as multiple doses.

** If D50W is unavailable, other solutions (D25W, D10W OR D5W) may be used, with the amounts given titrated to clinical improvement while minimizing fluid overload. Fluid choices in order to give 12.5 gm of glucose (Dextrose)):

D50 = 25 cc D10 = 125 cc

D25 = 50 cc D5 = 250 cc

PART 2: ADULT STANDING ORDERS
2-6 Metabolic

2-6-b. Hyperglycemia

Notify receiving hospital of high glucose level.

PART 2: ADULT STANDING ORDERS
2-7 Pregnancy

2-7-a. Active Labor: Not Imminent

1) IV saline lock
2) Position patient in the left lateral recumbent position.

PART 2: ADULT STANDING ORDERS
2-7 Pregnancy

2-7-b. Impending Newborn Delivery

1) Administer O_2 10 - 15 liters per minute via mask.
2) Start IV saline lock and prepare for delivery of newborn.
3) Check the perineum for crowning of the head, or prolapsed cord. If prolapse is present, do the following:
    a) Instruct patient not to push.
    b) Position patient in knee-chest position (facing down).
    c) Use gloved fingers to lift presenting part, and relieve compression of the cord.
4) For any OB complications (such as prolapsed cord, breech, shoulder,

dystocia, etc.), **COMMUNICATE** with base station physician and stress the presence of the complicating factor.

5) If labor progresses to delivery:
    a) Control the baby's head to assist the mother: place one hand over the fetal head and apply minimal stabilizing pressure to prevent explosive birth and to carefully catch the baby.
    b) Feel for cord wrapped around neck and, if present, lift it gently over the head. If cord is too tight to lift over the head, double clamp the cord, then cut it between the clamps.

After delivery continue care as follows –

Baby:

1) Just after delivery, place baby on mother's abdomen.
2) Suction baby's mouth and nose with bulb syringe as needed to clear baby's airway.
3) Clamp cord approximately 10 inches from the baby and second clamp 2 inches further towards mother. Cut cord between clamps.
4) Keep the newborn warm, dry, wrapped.
5) Do APGAR evaluations at 1 minute and 5 minutes.
6) Follow Neonatal / Newborn Resuscitation Pediatric SO or current NRP / NALS / PALS guidelines.

After delivery – Mother:

1) After “routine” healthy delivery of the baby and also the placenta, then apply firm rubbing pressure to the uterus through the lower abdominal wall.
2) If post-partum vaginal bleeding is severe: Add Oxytocin 20 units to 1 liter NS and run wide open until bleeding is controlled, or until 1 liter is infused.
3) If excessive hemorrhage or shock, [see 1-7. Shock/Hypovolemia].

PART 2: ADULT STANDING ORDERS
2-7 Pregnancy

2-7-c. Eclampsia

Pregnancy-related hypertension and hyperreflexia, possibly progressing to seizures

1) Check glucose and treat if hypoglycemia [see 2-6-a. Hypoglycemia/Insulin Reaction].
2) Cardiac monitor
3) Minimize lights, noise, other stressors
4) Position left lateral recumbent.
5) Magnesium Sulfate 4 gm IV (in 100 ml NS) drip given slowly, over 20 minutes
6) If seizures continuing 5 min after beginning IV Magnesium Sulfate,

administer Midazolam 2 mg IV/IN/IO/IM.

7) Continuous assessment of patient's airway, VS, and mental status. Magnesium sulfate may cause hypotension and decreased respiratory drive, so monitor closely.

PART 2: ADULT STANDING ORDERS
2-7 Pregnancy

2-7-d. Vaginal Bleeding in Pregnancy

Possible placenta previa or placental abruption:

1) Start 2 large bore IV lines
2) If necessary, treat for hypovolemic shock [see 1-7. Shock/Hypovolemia].

PART 2: ADULT STANDING ORDERS
2-8 Respiratory

2-8-a. Respiratory Failure

This SO applies in cases of either impending respiratory arrest or respiratory arrest as shown by:

1) Inability to maintain O_2 saturation ≤ 90% mmHg.
2) Respiratory rate < 6 breaths per minute.
3) Extreme work of breathing

Where a pulse exists:

1) Do PO_X and $ETCO_2$
2) Provide rescue breathing by assisted bag-valve mask / BVM ventilation with O_2. If patient continues to deteriorate perform tracheal intubation

3) If unable to intubate successfully, perform the alternate airway management and respiratory support.
    a) Secure airway with supraglottic airway / SGA or
    b) Continue assisted ventilations with BVM with supplemental O_2 Establish IV NS at TKO, if not already done.
    c) Perform RSI [see 1-6. Rapid Sequence Intubation].

2-8-b. Bronchospasm

1) Administer O_2 [see 1-4. Oxygen Administration].
2) Administer inhalation aerosol: Add Albuterol 5 mg and ipratropium 0.5 mg into nebulizer.
    a) If albuterol unavailable use levalbuterol 2.5 mg
3) If initial treatment is insufficient, may repeat treatments X2.
4) If no response to first nebulizer treatment in the setting of a patient's history of CHF, or if pulmonary edema is suspected on examination, do not just repeat the nebulizer [see 2-1-c. Congestive Heart Failure and Pulmonary Edema].
5) If severely ill and no response to nebulizer treatments, consider:

a) Epinephrine 1:1,000, 0.3 mg (0.3 ml) IM
b) Magnesium Sulfate 2 gm IV slow drip over 10 minutes
c) Epinephrine drip: 1 mcg/min. 1 mg mixed into 1,000 ml NS = 1 mcg/1 ml per minute

6) If a patient with severe bronchospasm requires tracheal intubation and is still hard to ventilate because of the bronchospasm, use the **Permissive Hypercapnea** approach, with gentle BVM bagging and a very slow BVM rate (8 per minute), with moderate tidal volume (6 cc/kg).

PART 2: ADULT STANDING ORDERS
2-8 Respiratory

2-8-c. Dyspnea

1) Administer O_2 [see 1-4. Oxygen Administration].
2) If congestive heart failure or pulmonary edema is suspected [see 2- 1-c. Congestive Heart Failure and Pulmonary Edema].
3) If indicated, apply Continuous Positive Airway Pressure / CPAP [see 1-1. CPAP].

PART 2: ADULT STANDING ORDERS
2-8 Respiratory

2-8-d. Pneumothorax

Be aware that pneumothorax may be a cause of dyspnea, and it can also be an effect of our treatment, so avoid aggressive, high-pressure ventilation with BVM or mechanical ventilator. Re-examine chest frequently and if needed, consider Needle Thoracostomy [see 1-11. Needle Thoracostomy].

PART 2: ADULT STANDING ORDERS
2-8 Respiratory

2-8-e. Pulmonary Edema / Congestive Heart Failure

For patient with dyspnea and rales present in both lungs, with the absence of fever [see 2-1-c. Congestive Heart Failure and Pulmonary Edema].

PART 2: ADULT STANDING ORDERS
2-9 Toxicology

2-9-a. General Management

1) Get a specific history of the poisoning, if available.
2) Collect pill bottles or containers at the scene.
3) Give supportive care if the cause of the poisoning is unknown.
4) Consider scene safety and personal protective equipment /PPE.

PART 2: ADULT STANDING ORDERS
2-9 Toxicology

2-9-b. Toxidromes

1) Depressant (opiates, benzodiazepines, alcohol).
2) Stimulants (cocaine, methamphetamine, other street drugs).
3) Hallucinogens (may be combined with other toxidromes, like stimulants).
4) Anticholinergic (caused by atropine, antihistamines, antidepressants, anti-parkinsonians, antipsychotics)
   Symptoms: AMS, dilated pupils, fever, red dry skin).
5) Cholinergic: **SLUDGE** syndrome (**S**alivation, **L**acrimation = teary eyes, **U**rination, **D**iaphoresis, **G**I upset = diarrhea, **E**mesis) Caused by some

insecticides, eating tobacco, e-cig liquid, mushroom poisoning.

PART 2: ADULT STANDING ORDERS
2-9 Toxicology

2-9-c. Other Toxicology Topics

1) Carbon Monoxide “CO”: can be inhaled in a structure fire and is treated with high flow O_2. Some cardiac monitors can test for CO.
2) Cyanide (CN): can be inhaled in structure fires and may cause very serious but non- specific illness. Hydroxocobalamin (hospital stocked) is an antidote for known or suspected CN poisoning. Hydroxocobalamin combines with CN to make cyanocobalamin (analog of vitamin B_{12}).

3) Naloxone: reverses the opiates/narcotics but may have a shorter half-life than the ingested drug and should be titrated / dosed to get the desired effect of improved respiration, while avoiding abrupt narcotic withdrawal. Dose is 0.4 mg – 2 mg by IN/IV/IO, titrated up to 8 mg.
4) Nerve Agents: terrorist weapons, with special antidotes (pralidoxime/ 2-PAM, atropine, auto-injectors).
5) Mass Psychogenic Illness: consider this when groups of severalpeople have dramatic symptoms but not specific objective signs of severe illness.

PART 2: ADULT STANDING ORDERS
2-10 Trauma

2-10-a. Trauma: General Guidelines

Penetrating injuries and blunt trauma are time sensitive conditions which may require rapid hospital surgical intervention. EMS must expedite transport of these patients to hospitals and trauma centers. For patients with hemorrhagic shock a lower BP may be acceptable, as excessive fluid administration can lead to increased hemorrhage. Early communication with the receiving hospital is imperative sothat **Trauma Activation** is facilitated. Provide condition updates to the receiving hospital for unstable patients. The paramedic shall:

1) Rapidly extricate and immobilize the patient if indicated [see 1-8. Spinal

Motion Restriction].

2) Initiate transport
3) If patient airway and effort is unstable then support ventilation. If indicated, administer supplemental oxygen [see 1-4. Oxygen Administration]
4) Patients with head injury and/or shock who are breathing spontaneously and can maintain O_2 saturation > 90% should be transported without delay for definitive establishment of the airway at the hospital
5) Establish IV/ IO access with NS and administer fluid: in 250 ml boluses until systolic BP reaches 90 mmHg if no head injury, or 110 mmHg in patients with suspected head injury
6) Once BP target is reached, then drop the infusion rate to TKO
7) Caution: Be aware of possible

hypothermia in patients with large blood loss, large open wounds, or in elderly patients. If necessary, cover patients with blankets and possibly turn off the air conditioning in the ambulance patient compartment

8) Physical exam should not repeatedly search for crepitus / manipulate the pelvis or other broken bones, since this increases pain and bleeding
9) Dislodged teeth may be transported in a container with NS or milk, with care to not clean the tooth off, as this reduces the chances of successful reimplantation

PART 2: ADULT STANDING ORDERS
2-10 Trauma

2-10-b. Fractures, Extremity Injuries and Amputations

1) Control all major bleeding. Consider tourniquet use when direct pressure fails to control life threatening hemorrhage rapidly
2) Appropriate wound care: Cover open wound with sterile dressings
3) Splinting:
    a) Immobilize stable fractures by placing a padded splint across the fracture, and the adjacent joints above and below
    b) If an injured extremity is noted to be pulseless distal to an angulated fracture, a single attempt at realignment may be

performed prior to splinting

c) Document distal vascular and neurological findings
d) For suspected isolated mid-shaft femur fractures without evidence of pelvic fracture, use a traction splint as indicated

4) Antibiotic Administration of cefazolin for open fractures, amputations, and major traumatic wounds (50 mg/kg IV/IO – Max Dose 2 g) Refer to Section 1-15 Open Fracture / Major Traumatic Wounds).
5) Amputations: Cover amputated anatomy with saline moistened gauze, then covered by a dry dressing. Amputated body parts should be transported with cool,

damp saline moistened gauze, in a sealed bag, and kept cool, but not packed directly on ice

6) Pain management [see 1-5. Pain Reduction]

PART 2: ADULT STANDING ORDERS
2-10 Trauma

2-10-c.Head Injuries

1) Perform a careful exam of the entire head and spine, and a brief neurological exam including Glasgow Coma Scale / GCS
2) Find out if the patient is on any blood thinner medications
3) Start an IV and give O_2, evaluate airway, control vomiting, and if possible, elevate the head of the bed 20 - 30 degrees
4) Try to avoid any hypoxic or hypotensive episodes. Keep PO_X 94-98% and BP ≥ 110 systolic
5) Repeat the GCS scoring for any apparent worsening on repeat neurological exams and notify the

receiving hospital of possible brain herniation for unilateral pupil dilation or abnormal posturing

PART 2: ADULT STANDING ORDERS
2-10 Trauma

2-10-d. Ocular Trauma

Eye injuries or periorbital injuries with possible injuries to the globe should be protected with a rigid eye shield, taped in place. Avoid any pressure on the globe.

PART 2: ADULT STANDING ORDERS
2-10 Trauma

2-10-e. Shock: Hypovolemia

For systolic BP < 90 mmHg which is considered to be secondary to hypovolemia [see 1-7. Shock/Hypovolemia].

PART 2: ADULT STANDING ORDERS
2-10 Trauma

2-10-f. Termination of Resuscitation

Traumatic Cardiac Arrest [see 1-10. Termination of Resuscitation].

PART 3: Pediatric Standing Orders

P-3-1 Introduction and General Guidelines

Respiratory failure is the most common cause of cardiac arrest in pediatric patients. Oxygen should be administered by mask at high flow rates (15 liters) to any serious patient initially, then per 1-4. Oxygen Administration. The adequacy of oxygenation and ventilation must be constantly re-evaluated. Bag-valve mask ventilation is preferred for children who require ventilatory support, especially if the transport time is short. The “Broselow Tape” or another pediatric dose resuscitation estimation tool should be used to pick the correct tracheal tube size and for estimating the patient’s weight. Vascular administration (IV or IO) of resuscitation medications is preferable to administration by the tracheal route. Some drugs can be

given intranasally (IN) by atomizing or misting the dose. Resuscitation drugs administered via peripheral IV or IO should be followed by a bolus of 5 ml Normal Saline (NS). Do not delay transport attempting to initiate an IV or an IO. Pediatric Standing Orders allow IO line placement for pulseless ventricular fibrillation, ventricular tachycardia, asystole, and pulseless electrical activity. For all other conditions, an attempt to communicate with the Base Station Physician should be made first before doing an IO line.

Critical pediatric patients may have unsuspected hypoglycemia. Check blood glucose early in their resuscitation.

Pediatric cardiac and respiratory topics will now follow the most current national **PALS** and **NALS** / **NRP** guidelines (see appendix).

Pediatric patients are defined here as less than 13 years old. For children the size of a small adult consider using adult Standing Orders.

PART 3: Pediatric Standing Orders

P-3-2 Cardiovascular

1) See **PALS** and **NALS / NRP** current guidelines.
2) Cardiac arrest and peri-arrest situations should be managed with special attention to respiratory support and re-evaluation. If CPR is done, it should be High Performance CPR / HP-CPR
3) Dysrhythmias: treat all types per current PALS guidelines

PART 3: Pediatric Standing Orders

P-3-3 Central Nervous System: Seizures and Status Epilepticus

Continuous generalized seizure or repeated seizures without return to consciousness.

1) Administer O_2 at 15 liters/minute by mask or BVM ventilation
2) Do blood glucose test and refer to [P-3-6 Metabolic: Hypoglycemia / Insulin Reaction]
3) If seizure activity has lasted more than 5 minutes since it began and has not ceased, administer one dose of Midazolam therapy as follows:
    a) Intramuscular (IM) (Preferred – First Line):
    Midazolam (0.1 mg/kg IM –

MAX 5 mg/dose)

b) Intranasal (IN)
Midazolam (0.2 mg/kg IN – MAX 5 mg/dose)
NOTE: Highly concentrated 5 mg/ml must be used for IN administration; administer half in each nostril using mucosal atomizer device

c) Intravascular (IV)
Midazolam IV (0.1 mg/kg – MAX 2 mg/dose)

4) Observe response and re-evaluate post medication administration at 5 minutes. If seizure activity continues, establish IV access, and may repeat Midazolam dosing once. Route of administration may vary and combined maximum dose (intramuscular + intranasal +

intravenous) is 5 mg total. Contact base station for continued seizure activity, if maximum dosage has been reached, or mixed benzodiazepine medication administration is needed.

5) If Midazolam is not available, may substitute alternative benzodiazepine (Diazepam or Lorazepam) as follows:
   a) Intramuscular (IM)
      Diazepam (0.1 mg/kg IM – MAX 5 mg/dose) OR
      Lorazepam (0.05 mg/kg IM – MAX 2 mg/dose
   b) Intravenous (IV)
      Diazepam (0.1 mg/kg IV – MAX 5 mg/dose) OR
      Lorazepam (0.05 mg/kg IV – MAX 2 mg/dose)

6) Observe response and re-evaluate post medication administration at 5 minutes. If seizure activity continues, establish IV access, may repeat Diazepam or Lorazepam dosing once. Route of administration may vary, and maximum combined dose (intramuscular + intravenous) is Diazepam 10 mg vs Lorazepam 4 mg total. Contact base station for continued seizure activity, if maximum dosage has been reached, or mixed benzodiazepine medication administration is needed.
7) Monitor respiratory status and blood pressure requirements, support as needed, and avoid intubation if adequate oxygenation

and ventilation are present

8) Pediatric seizure temperature management: If temperature ≥ 100.4°F (38.0°C) undress child to initiate cooling measures. If prolonged transport, patient has regained normal mental status without risks of aspiration, and there are no contraindications to administration (e.g., Patient has not received acetaminophen within six (6) hours, does not have hypersensitivity/allergy, suspected overdose, active liver disease, or hepatic impairment) acetaminophen 15 mg/kg PO (typically elixir for age ≤ 10y/o – MAX DOSE – 1000 mg) may be administered. Elevated temperature must be recorded,

including time assessed, medication delivery, and route of administration. This information must be clearly recorded in the medical record and communicated during EMS report to ED staff.

PART 3: Pediatric Standing Orders

P-3-4 Environmental

P-3-4-a. Allergic Reaction, Minor

Administer Diphenhydramine 1 mg/kg PO/IV/IM. Maximum dose 50 mg.

PART 3: Pediatric Standing Orders
P-3-4 Environmental

P-3-4-b. Allergic Reaction, Anaphylaxis

1) Administer O_2 [see 1-4. Oxygen Administration]
2) Administer Epinephrine (1:1,000) 0.01 mg/kg IM, maximum dose 0.3 mg / 0.3 ml
3) Establish IV NS and give 20 ml/kg fluid bolus
4) In case of wheezing or respiratory distress administer aerosolized Albuterol 5 mg (2 vials) simultaneously with ipratroprium 0.5 mg (1 vial)
    a) If albuterol unavailable use levalbuterol 2.5mg.
5) If patient persistently hypotensive, repeat IV NS bolus 20 ml/kg

6) If unable to establish IV the establish IO access.
7) If patient remains in hypotensive or in persistent bronchospasm:
    a) Administer Epinephrine 0.01 mg/kg IV or IO. Maximum dose 1 mg.
    b) For more accurate dosing, use the dilute form 1:10,000 which is 0.1 mg/ml
    c) Infuse IV fluids briskly and administer the IV Epinephrine dose slowly, over 1- 2 minutes
    d) Monitor cardiac monitor and VS
8) If no IV or IO access available and patient remains in hypotensive or in persistent bronchospasm, repeat Epinephrine 0.01 mg/kg IM 5 minutes after first dose. Maximum

dose 0.3 mg.

9) Administer Diphenhydramine 1 mg/kg PO/IM/IV. Maximum dose 50 mg.

PART 3: Pediatric Standing Orders
P-3-4 Environmental

P-3-4-c. Drowning

1) Administer O_2 [see 1-4. Oxygen Administration]
2) Consider CPAP if respiratory distress persists. Apply CPAP if **all** of the following conditions are present and there are no contraindications:
    a) BP > 90 mmHg systolic
    b) The patient is awake and able to tolerate the CPAP
    c) The patient can fit the mask
    d) The patient if able to maintain an open airway
3) Establish an IV NS at TKO
4) Be aware of possible hypothermia
5) Prevent further heat loss

6) Patient should be dry
7) Cover the patient with blankets and turn off the air conditioner in the ambulance patient compartment
8) Advise receiving facility/physician of CPAP use
9) If respiratory status deteriorates, remove the device and assist ventilations with BVM

PART 3: Pediatric Standing Orders

P-3-5 Gastrointestinal: Severe Vomiting

1) Choose either oral or intravenous route for treatment
2) For oral treatment, administer sublingual Ondansetron 2 - 4 mg ODT (orally dissolving tablet). For dosing:
    a) Cut one 4 mg ODT in 1/2 for the 2 mg dose for children ≤20 kg
    b) Give the whole 4 mg tablet for children more than 20 kg
    c) Repeat once if needed after minutes.
    d) For a semi-cooperative child, sublingual/tucked in the cheek/anywhere in the mouth/swallowed it

accidentally are all acceptable

3) For intravenous treatment, establish IV Normal Saline at TKO rate, administer Ondansetron IV dose = 0.1 mg / kg, max 4 mg to be given slowly over 2 minutes, with IV fluids running
4) If vomiting is not controlled after 5 minutes, you may repeat the initial IV dose once
5) Apply pulse oximeter and evaluate the patient for possible serious causes of vomiting

PART 3: Pediatric Standing Orders

P-3-6 Metabolic: Hypoglycemia / Insulin Reaction

Check blood glucose. If blood glucose reading **<70** mg/dl (or **<40** mg/dl in newborn) perform the following steps:

1) If child is alert and able to swallow and maintain their airway, give glucose oral preparation 12 - 30 grams the go to step 4
2) If child is not alert or is not able to swallow and maintain their airway, start IV with Normal Saline at TKO rate and give Glucose according to age as follows:
    a) For newborns give 0.2 g/kg = 2ml/kg of 10% Dextrose Solution.

i. If D10W is unavailable, prepare D10NS by diluting D50W by 4:1 with saline by taking a 250 ml bag of NS, withdraw and discard 50 cc of NS, add a 50 ml D50W prefill syringe to the bag and mix
ii. Label it D10NS
iii. Draw up dose

b) For infants and **all** children older than 1 month, give glucose 0.5 g/kg or 5 ml/kg using D10W, (max dose = 12.5g)

3) If unable to obtain IV access, give Glucagon 1 mg IM (0.5 mg IM if less than one year of age)
4) Recheck blood glucose and treat as needed

PART 3: Pediatric Standing Orders

P-3-7 Newborn Resuscitation

1) Warm, position, suction, dry, stimulate and evaluate respirations, heart rate and color.
2) If heart rate is less than 100 / min, or poor respirations and / or the neonate is noted to be cyanotic and limp: Ventilate 20 breaths in 30 seconds by mask, using positive pressure, 100% O_2, and careful technique
3) If heart rate is still < 60, begin cardiac compressions at rate of 120 per minute, and give: Epinephrine (use the dilute 0.1 mg / ml form, old labeling 1:10,000) dose = 0.3 ml /kg. IV / IO or: Endotracheal Epinephrine dose 0.5 - 1.0 ml/kg ET

(followed by 2 ml Normal Saline ET flush, and restart BVM); repeat dose every 3 – 5 minutes

4) If heart rate remains < 60, continue CPR and assisting ventilation with BVM (preferred) or intubate with 3.5 ET tube for full term (for premature: 3.0 ET for 2-3 kg and 2.5 ET for < 2 kg), and ventilate at a rate of 40-60 breaths/minute

PART 3: Pediatric Standing Orders
P-3-8 Respiratory

P-3-8-a. Bronchospasm

Respiratory distress with wheezing, not involving a foreign body.

1) Administer oxygen by mask [see 1-4. Oxygen Administration]
2) If in severe respiratory distress, give 0.01 mg/kg Epinephrine IM (use the 1 mg/1 ml form, old labeling = 1:1,000): give the dose IM up to 0.3 mg maximum especially if the patient is very poorly or not inhaling the nebulized medication
3) Administer 1st inhalation updraft aerosol treatment with Albuterol 2.5 mg via nebulizer. If initially in severe bronchospasm or impending

respiratory arrest, increase the dose in 1st updraft treatment to Albuterol 5 mg (2 vials), plus ipratropium dosed by age:

a) ½ vial / 0.25 mg for age < 6, and
b) 1 vial / 0.5 mg for age > 6 added to nebulizer

4) If albuterol is unavailable use
    a) Levalbuterol
        i. <12 years old – levalbuterol 1.25mg
        ii. >12 years old – 2.5mg
5) If not improving, do a 2nd inhalation updraft treatment with Albuterol 5 mg plus ipratropium 0.5 mg via nebulizer
6) If albuterol is unavailable use
    a) Levalbuterol
        i. <12 years old 1.25 mg

ii. >12 years old – 2.5 mg

7) If still not improving, consider Magnesium sulfate (50 mg/kg IV, maximum dose of 2 g) over 10 minutes administered for severe bronchoconstriction and concern for impending respiratory failure.
8) If patient with severe bronchospasm requires intubation and is very hard to ventilate because of severe bronchospasm, consider use of ET Epinephrine using the dilute, 0.1 mg/ml form, (old labeling = 1:10,000) with the dose 0.1 ml/kg = 0.01 mg/kg syringe-misted/atomized down the endotracheal tube to reduce the bronchospasm
9) After intubation the patient's lungs may remain "tight"/stiff, so you

should use special BVM or ventilator settings for safety:

a) Use a slow rate of 8 per minute AND

b) Use a low tidal volume of 6 cc per kg

10) Use the end-tidal ($EtCO_2$ monitor)

PART 3: Pediatric Standing Orders
P-3-8 Respiratory

P-3-8-b. Respiratory Arrest or Inadequate Airway

Where a Pulse Exists:

1) Open airway and administer oxygen by bag-valve-mask ventilation
2) If unable to ventilate with BVM consider Endotracheal intubation
3) If unable to intubate, continue assisted mask ventilations with very careful technique
4) Establish IV with Normal Saline at TKO rate

PART 3: Pediatric Standing Orders

P-3-9 Toxicology

Drug Overdoes

1) Assess airway and respirations
2) Apply cardiac monitor
3) Start IV Normal Saline at TKO rate
4) Evaluate for “Toxidrome” type, to help plan the patient’s treatment
5) In suspected serious opiate overdose, administer Naloxone 0.1 mg/kg given by IN/IV/IO
6) In patients with no gag reflex, transport in left lateral decubitus position and be prepared to suction, to assist with BVM, or to intubate the airway if necessary
7) Bring in medication bottles/street drug containers/any available overdose or poison exposure information

PART 3: Pediatric Standing Orders
P-3-10 Trauma

P-3-10-a. Antibiotic Administration for open fractures, amputations, and major traumatic wounds

1) Antibiotic administration of cefazolin for open fractures, amputations, and major traumatic wounds (50 mg/kg IV/IO – Max Dose 2 g) Refer to Section 1-15 Open Fracture / Major Traumatic Wounds)

PART 3: Pediatric Standing Orders

P-3-10 Trauma

P-3-10-b. Hypovolemic Shock

If the patient exhibits signs of shock considered to be secondary to hypovolemia:

1) Administer oxygen via mask or endotracheal tube
2) Establish IV with Normal Saline
3) If unable to start IV, and patient is in critical condition consider starting IO
4) Rapidly infuse Normal Saline 20 ml/kg
5) Do not delay transport
6) Be aware of possible hypothermia in patients with large blood loss or large open wounds, therefore, cover patient with blankets and turn-off the air conditioner in the ambulance patient compartment

PEDIATRIC VITAL SIGN REFERENCE

Source: *Pediatric Advanced Life Support Provider Manual.* American Heart Association, 2006.

Pulse Rate

Age	Pulse Rate
Newborn to 3 months	85-205
3 months to 2 years	100-190
2 years to 10 years	60-140
>10 years	60-100

Respiratory Rate

Age	Respiratory Rate
Infant (<1)	30-60
Toddler (1-3)	24-40
Preschooler (4-5)	22-34
School age (6-12)	18-30
Adolescent (13-18)	12-16

Blood Pressure

Age	Normal Systolic	Normal Diastolic
1 day	60-76	30-45
4 days	67-84	35-53
1 month	73-94	36-56
3 months	78-103	44-65
6 months	82-105	46-68
1 year	67-104	20-60
2 years	70-106	25-65
7 years	79-115	38-78
15 years	93-131	45-85

Age	Definition of Systolic Hypotension
0-28 days	<60
1-12 months	<70
1-10 years	<70 + (age in years x 2)
>10 years	<90

THIS REFERENCE IS NOT PART OF THE PROTOCOLS. IT IS PROVIDED AS A COURTESY.

APGAR

Component	Score of 0	Score of 1	Score of 2
Appearance	Core Cyanosis	Pink Core	Pink
Pulse Rate	Absent	<100	>100
Grimace	Unresponsive	Weak grimace or cry with stimulation	Strong cry or pulls away with stimulation
Activity	Limp	Some flexion	Active motion
Respirations	Absent	Slow and irregular	Strong cry

PART 4: UPDATES AND CHANGES

Hawaii State Standing Orders – Updates and Changes

Emergency medications and procedures change rapidly as newer treatments are introduced. Every attempt has been made to update this 2023 edition of the Standing Orders with the most current emergency medical treatments. Should an error or omission be found please notify Department of Health Emergency Medical Services and Injury Prevention System Branch (EMSIPSB). Please include the following information:

Name: _____

Email address: _____

Phone: _____

Date: _____

- Topic requested for revision (procedure, equipment, medications, other)
- Standing Order section
- Change request
- Include relevant medical citation/s

E-mail to Alvin C. Bronstein MD, FACEP

EMSIPSB Chief

alvin.bronstein@doh.hawaii.gov

Mahalo,

Your Hawaii State EMS Medical Directors

APPENDICES

AP-1. Treatment Algorithm Links

AP-1-a. ACLS

in progress

AP-1-b. PALS

in progress

AP-1-c. NRP

in progress

AP-2. REFUSAL OF CARE (AGAINST MEDICAL ADVICE) PROTOCOL

Assessment: Examine the patient as thoroughly as possible.

Provide any necessary care that the patient will allow.

Document each part of this process thoroughly.

1) Mental Status
    - Level of Consciousness: e.g. difficult to arouse?
    - Orientation: e.g. disoriented to surroundings?
    - Affect: e.g. appropriate to the situation?
    - Judgment: e.g. signs of incoherence? impairment?

- Thought: e.g. hallucinations? suicidal?

2) Inform patient of the nature and severity of the emergency situation
3) Risks/Benefits: Advise the patient in plain language of the potential benefits of evaluation, treatment, and/or transport, and the risks associated with refusal.
4) Reason for refusal should be asked. If there is a perceived lack of understanding, attempt to clarify and explain (again) the rationale for care and consequences of refusal.
5) Confirm understanding: Have patient repeat back the potential consequences of their decision to demonstrate that they are aware of the risks of refusal.
6) Refusal Form signature: Obtain the

patient's (or decision-maker's) signature on the refusal form. If the patient is uncooperative, obtain the signature of a witness to the refusal and your discussion with the patient.

7) Right to change decision: Inform the patient that they can call back if they change their mind.
8) Surrogate decision-makers (e.g. Parent, Legal Guardian, Healthcare Power of Attorney, etc.) refusing care for the patient, should have the above information explained to them and sign the refusal form.
9) Special situations (e.g. POLST, DNR orders, suspected child abuse, domestic violence, etc.), should follow the protocols established for that particular situation.

MOBILE INTENSIVE CARE TECHNICIAN STANDING ORDERS FOR MASS PROPHYLAXIS

November 1, 2001

TO: EMS Providers
EMS Training Programs

FROM: Donald C. Fancher, M.D.
State EMS Medical Director

SUBJECT: **Mobile Intensive Care Technician Standing Orders for Mass Prophylaxis Following a Bioterrorism Incident**

The document, *Mobile Intensive Care Technician Biological Outbreak/Exposure Mass Prophylaxis & Immunization Standing Orders*, is the first edition of a manual that provides the Department of Health with standing orders for preventive antibiotic therapy and/or immunizations in the event of a bioterrorism attack due to anthrax, brucellosis, plague, smallpox, or tularemia.

The document contains 1) an overview of the bioterrorism preparedness response plans regarding mass prophylaxis and immunization; 2) standing order protocols for anthrax, brucellosis, plague, smallpox, and tularemia; 3) antibiotic information for practitioners; 4) antibiotic information brochures for patients; and 4) data management and consent forms.

This document should be considered an annex to the *State of Hawaii EMS MICT Standing Orders and Extended Standing Orders*.

The standing orders contained within this document become activated when the Director of Health declares a state of emergency due to a specific bioterrorism incident, and issues a memorandum ordering the EMS prehospital providers to begin mass prophylaxis. The memorandum would contain information regarding the nature of the bioterrorism incident, the causative microorganism, the population at risk, and the mass prophylaxis protocol to be followed.

This document may be reviewed annually to ensure that the standing orders are up to date, and reflect the latest available recommendations from the Centers for Disease Control and Prevention for Bioterrorism Preparedness and Response.

cc: EMS Medical Directors

Mobile Intensive Care Technician
Biological Outbreak/Exposure
Mass Prophylaxis and Immunization Standing Orders

OVERVIEW

INTRODUCTION

An intentional biological agent release may produce thousands of casualties. Victims of a bioterrorism (BT) incident may die despite the best medical management. Case fatality rates will depend upon the specific microbial agent released, and the susceptibility of the exposed population.

The rapid implementation of a mass prophylaxis program is the most effective method of countering the consequences of a biological incident. The best chance to save lives following such an event is through early recognition and prompt administration of appropriate antibiotic therapy and, if available, vaccines to exposed (infected) individuals before symptoms occur.

The standing orders in this manual are specific for the mass prophylaxis and immunization for BT incidents involving anthrax, brucellosis, plague, smallpox, and tularemia. They can be adapted for other BT agents that might be used in a BT attack. The bacteria that cause anthrax, plague, tularemia, and brucellosis are susceptible to antibiotics. Antibiotic therapy of exposed, or potentially exposed, individuals will prevent or mitigate these diseases and save lives. No preventive antiviral drugs against smallpox currently exist.

Vaccine supplies for smallpox and anthrax are currently limited. Food and Drug Administration (FDA) approved vaccines against aerosol exposure to plague, brucellosis, and tularemia either do not exist, or are ineffective.

POLICIES

1. A mass prophylaxis program will be implemented within 24 hours of recognition of a BT incident.

2. The Department of Health (DOH) has the legal authority to adopt rules requiring and governing immunizations against any communicable disease if a suitable immunizing agent is available for the disease, and a need for immunization against it exists within

the State. The department may also provide vaccines and other immunizing agents to private and public health care providers for administration to the general public (§325-32, Hawaii Revised Statutes). The DOH will establish standing orders for the administration of antibiotics and vaccines, and establish a priority list for the distribution of these prophylactic pharmaceuticals.

3. If a BT event occurs, the DOH will define the distribution and determinants of the disease event, including the case definition, etiology, source, time, person, place, disease pattern, risk factors, exposed populations, and mass prophylaxis recommendations.

OPERATIONS

1. The State Epidemiologist will investigate suspected or confirmed outbreaks involving BT organisms (e.g., anthrax, brucellosis, plague, smallpox and tularemia); and other mysterious or undiagnosed disease outbreaks that threaten the public's health. The State Epidemiologist will determine appropriate disease control measures, and report findings and recommendations to the Director of Health.

2. The Director of Health activates the DOH Emergency Operations Center (EOC), as outlined in the *State of Hawaii DOH Emergency Operations Plan*, when notified by law enforcement agencies of a credible BT threat, or by recommendations of the State Epidemiologist that a true state, or county-wide, infectious disease emergency exists.

3. The Director of Health may order DOH personnel and EMS providers to activate plans for mass prophylaxis and/or immunization when:

    a. A single confirmed case is identified in the community that can't be attributed to a natural infection.
    b. Multiple confirmed or highly suspected cases have occurred within a short period of time, and the source of the infection is unknown.
    c. Law enforcement or public health officials have determined that a definite or highly probable release of a virulent biological agent has occurred within the community.

4. The Public Health Nursing Branch (PHNB) and EMS providers will conduct mass prophylaxis at Public Health Clinics identified and activated by the Director of Health following a BT event. Other clinic sites may be activated, if necessary, at neighborhood fire stations, additional city and county locations, or other state government facilities depending upon the magnitude and location of the exposure or outbreak. These clinics will be referred to as Neighborhood Assistance Centers (NAC).

5. The NAC will provide basic information to the public, provide preventive medications and/or immunizations, and direct victims to appropriate treatment centers. Public health nurses and other DOH employees together with community volunteers will staff NAC sites as outlined in the *State of Hawaii DOH Emergency Operations Plan*.

6. The EMS Administration will be the central point of communication, mobilization, and staffing for DOH prophylaxis sites during a BT event. The Deputy Director for the Health Resources Administration will determine the nursing personnel that will report for duty, and their distribution in the field to include: nursing offices, emergency units, shelters, public health clinic sites, and field operations.

7. NAC will administer antibiotics and/or vaccines to exposed asymptomatic individuals. Symptomatic, or ill individuals will be referred to hospitals, private physicians, or mass care centers depending upon the severity of the symptoms and magnitude of the BT event.

8. NAC personnel which may include EMS personnel are responsible for client registration, informed consent, maintaining client health records, and tracking individuals.

9. NAC personnel will collect the following data on a daily basis and report theses findings to the EMS provider administration which will be transmitted to the Director of Health:

    a. The number of clients starting antibiotic prophylaxis or vaccination.
    b. The number of clients completing antibiotic prophylaxis or vaccination.
    c. The number of clients presenting with symptoms.
    d. The number of clients developing symptoms during or after prophylaxis and/or vaccination.
    e. The number of clients referred to an in-patient medical facility for treatment.
    f. The number of clients developing adverse reactions to prophylaxis or immunization.

10. NAC personnel will report the names of clients who are infected with identified BT agents, people directly exposed to these cases, or people environmentally exposed to these microbial agents and transmit information to the Director of Health.

11. Each client will receive a one-week supply of antibiotics. This will require that clients return to the NAC for refills.

12. Infection control procedures will follow recommendations outlined in the document written by the Association for Professionals in Infection Control and Epidemiology (APIC) and the CDC entitled *Bioterrorism Readiness Plan, a Template for Healthcare Facilities.*

13. Public Health Nursing sections are responsible for maintaining adequate infection control supplies and protective clothing for the clinic staff.

REFERENCES

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2. State of Hawaii Department of Health Emergency Operations Plan.

3. Oahu Disaster Plan for HRA Nursing Personnel.

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CLINIC FUNCTIONS AND OPERATIONAL ACTIVITIES	TYPE OF STAFFING AND NUMBER NEEDED	TRAINING NEEDS
▸ **REGISTRATION** *Welcome clients *Provide written information; brochures *Assist with completion of registration form *Provide information *Oversee registration area for questions; response to urgent needs	▸ Volunteers ▸ Clerical workers ▸ 34 workers covering four (4) stations ▸ One PHN/RN/MICT/EMT	▸ Overview ▸ Reception of clients as first contact; importance of relationship building; trust and support; how to handle anxious clients; managing conflicts ▸ Specific information as to the event; symptoms ▸ Brochures/Registration forms completion ▸ Common questions that will be asked and responses ▸ Triage processes
▸ **INTAKE PROCESSES** *Interview – assessment as to contact; length, type of contact; presence of symptoms; type and severity of symptoms *Medical history and documentation *Triage for services- no services and provide information only; referral to in-patient facility; need for prophylaxis or vaccinations *Documentation and completion of forms	▸ 1-PHN Coordinator ▸ 4- PHNs/RNs/MICT/EMT to set up four stations ▸ 2- LPNs to assist PHNs with clients with acute symptoms and need for inpatient referral and arrangements ▸ 1-Clerical ▸ Paramedics	▸ Same as above PLUS ▸ Disease processes; course of disease; symptomatology; treatment options- risks and benefits; communicability ▸ Preventive measures in home and environment; personal self care measures ▸ Emphasis on treatment modalities and follow-up required ▸ Training in use of forms and data collection
▸ **ANTIBIOTIC PROPHYLAXIS OR VACCINATION** *Informed Consent Process, including signing of consents *Risks and Benefits of treatment options *Anthropometric measurements *Instructions and written materials about treatment *Administration of Medications or vaccination *Assess for knowledge acquisition and understanding *Return timeframe *Documentation and data collection processes	▸ One PHN overseeing the entire station ▸ 4- PHNs/RNs/MICT ▸ 4-LPNs/EMT ▸ 2-clerical to give specific return appointment ▸ American Red Cross Representative ▸ Mental Health Counselor	Same as above

PUBLIC HEALTH CLINIC ORGANIZATION
FOR MASS PROPHYLAXIS AND IMMUNIZATION
PAGE 2

CLINIC FUNCTIONS AND OPERATIONAL ACTIVITIES	TYPE OF STAFFING AND NUMBER NEEDED	TRAINING NEEDS
▸ **DATA ENTRY AND OTHER CLERICAL FUNCTIONS** *Verification with client of all demographic information, including accuracy of contact phone numbers *Provide return appointment card; enter return appointment in clinic book *Data entry of all information *Generate data report at the end of the clinic	▸ 1-Secretary or office manager type personnel to oversee this station ▸ 5-Clerical workers ▸ Volunteers	▸ Similar to training listed above for the Registration Station ▸ Use of Computer and software ▸ Communication with clients in verification of information ▸ Data entry functions ▸ Maintenance of appointment books ▸ Generate report for data reporting
▸ **MAINTENANCE OF MEDICAL/CLINIC RECORDS** *Proper filing of records *Proper handling of consent forms within each client's record *Organization of all forms *Set up system to have records available for next clinic	▸ 2-clerical	
▸ **FIRST AID STATION/HOLDING AREA** *Provide first aid and other emergency measures *Allay extremely anxious clients or those with challenging behaviors *Observation for any untoward reactions	▸ EMS Personnel ▸ Mental Health Counselor ▸ DMAT ▸ Military	
▸ **SECURITY**	Honolulu Police Department; Public Safety; National Guard – need to follow-up	Managing potential infectious disease patients. Safety precautions at the clinic. Coordination with DOH, and ARC
▸ **LOGISTICS FOR TRANSPORTATION**	Follow-up needed.	

State of Hawaii Department of Health	Emergency Medical Services System	Page 1 of 1
Approved By: Donald C. Fancher, M.D.		Effective Date: November 1, 2001
Subject: Mobile Intensive Care Technician Standing Orders for Administration of Immunizations		Review Date: November 30, 2002

CONTRAINDICATIONS & PRECAUTIONS TO IMMUNIZATION

See individual vaccines for contraindications and precautions.

NOTE:

If a contraindication or precaution to any immunization exists, do NOT administer vaccine. Refer patient to their primary care provider.

PROTOCOL FOR THE MANAGEMENT OF ADVERSE REACTIONS TO VACCINES & MEDICATIONS

GENERAL GUIDELINES

All those who administer medications or vaccines must be aware that the recipient could experience an adverse reaction following the injection. Adverse reactions to vaccines are infrequent, but if an allergic reaction does occur, it can be life threatening.

Staff need to be prepared to respond immediately and appropriately to such emergencies. All clinic personnel must familiarize themselves with the management protocols contained herein and know where the emergency supplies are kept.

TYPES OF ADVERSE REACTIONS

Adverse reactions to an injection can range from a general feeling of faintness to a severe allergic reaction. Faintness or syncope are the more common of adverse reactions and are usually self limited; true allergic reactions are rare.

Symptoms of an allergic reaction may be *mild*, such as itching and hives, or *severe*, with shortness of breath, wheezing, and/or anaphylactic shock. Allergic reactions may begin almost immediately after the injection is given. Anaphylaxis is characterized by acute, progressive, respiratory distress and cardiovascular collapse (shock). Early recognition of an anaphylactic reaction is important because death can occur within minutes following the first symptoms.

It is important to distinguish between faintness/syncope and anaphylaxis. Should an adverse reaction occur, assess the patient and FOLLOW THE PROCEDURES PROVIDED IN THE ATTACHED PROTOCOL.

BASIC FIRST AID AND INITIAL ASSESSMENT PROCEDURES

Airway: Ensure the airway is clear; remove dentures and keep tongue from obstructing the oropharynx.

Breathing: Check for breathing; auscultate (listen for sounds at the chest), if necessary. When required, assist with breathing by using the ambubag or perform mouth-to-mouth resuscitation.

Circulation: Check carefully for a pulse; in case of cardiac arrest, initiate CPR.

Document any occurrence of an allergic reaction and report the incident to the Chief, Communicable Disease Division.

MANAGEMENT OF ANAPHYLAXIS or SHOCK-LIKE STATE IN ADULTS

DESCRIPTION

Signs and symptoms include flushing of the face, shortness of breath, difficulty breathing with audible wheezing or stridor. The pulse may be weak, irregular, or non-palpable.

This is a true emergency.

ACTION

1. Place the patient in recumbent position. Make sure the airway is clear. Use ambubag or other forms of assisted respiration if necessary. If no pulse, begin CPR.

2. ADMINISTER EPINEPHRINE

   Administer 0.3 ml of 1:1,000 epinephrine subcutaneously.

3. ADMINISTER BENADRYL

   Administer 50 mg. of BENADRYL IM at a different site than that given for the epinephrine.
   Maximum dose is 50 mg.

4. REPEAT EPINEPHRINE

   Administer 0.5 ml dose of 1:1,000 epinephrine subcutaneously 20 minutes after first dose if necessary.

5. REFER TO HOSPITAL OR PHYSICIAN

   Refer the patient to a hospital or physician, even if the patient appears stable.

MANAGEMENT OF ANAPHYLAXIS or SHOCK-LIKE STATE IN INFANTS AND CHILDREN

DESCRIPTION

Signs and symptoms include flushing of the face, shortness of breath, difficulty breathing with audible wheezing or stridor. The pulse may be weak, irregular, or non-palpable.

This is a true emergency.

ACTION

1. Place client in recumbent position. Make sure the airway is clear. Use ambubag or other forms of assisted respiration if necessary. If no pulse, begin CPR.

2. ADMINISTER EPINEPHRINE

   <u>INFANTS</u> (Birth to 12 months old)
   Administer 0.03 - 0.1 ml of 1:1,000 epinephrine subcutaneously. Repeat every 10-20 minutes as necessary. See attached table for exact dosage.

   <u>CHILDREN</u>
   Administer 0.1 to 0.3 ml of 1:1,000 epinephrine subcutaneously. Repeat every 10-20 minutes as necessary. See attached table for exact dosage. Maximum dose is 0.3 ml.

3. ADMINISTER BENADRYL

   Administer one dose of BENADRYL at a different site than that given for epinephrine. See attached table for exact dosage. Maximum dose of Benadryl in children is 25 mg.

   DO NOT ADMINISTER BENADRYL TO INFANTS LESS THAN 1 YEAR OLD.

MANAGEMENT OF ANAPHYLAXIS or SHOCK-LIKE STATE IN INFANTS AND CHILDREN

DESCRIPTION	ACTION
	4. REFER TO HOSPITAL OR PHYSICIAN Refer the patient to a hospital or physician, even if the patient appears stable.

MANAGEMENT OF FAINTING, DIZZINESS OR EXCITABILITY IN ADULTS AND CHILDREN

SYNCOPE (Fainting)

DESCRIPTION	ACTION
Patient is breathing normally, although respiration may be shallow. There is no respiratory distress (i.e., wheezing, tightness, or other impairment with breathing). The pulse is regular, but patient is unresponsive.	Place the patient in the recumbent position and check the pulse and respirations. Provide ammonia inhalant if consciousness is not regained in one minute. Allow to remain in quiet area for 15 minutes once conscious and observe.

"LIGHT-HEADEDNESS"

DESCRIPTION	ACTION
Patient complains of feeling faint, dizzy, or tired. Appears pale and may yawn. Pulse and respirations are generally steady. There is no respiratory distress (wheezing, tightness or other impairment with breathing).	Allow client to lie down and elevate lower extremities, or have client sit in a head-down position for several minutes. Make sure breathing is clear. Monitor to ensure patient is improving.

MANAGEMENT OF FAINTING, DIZZINESS OR EXCITABILITY IN ADULTS AND CHILDREN

HYPERVENTILATION OR EXCITABILITY

DESCRIPTION	ACTION
Rapid breathing with good air movement and no wheezing or stridor. Patient appears anxious, not tired or pale. May complain of light- headedness.	Make sure airway is clear. Instruct client to sit or lie down and slow down breathing. Have patient breathe into a paper bag to correct for hyper-ventilation. Provide support and reassurance. Monitor until the episode subsides to ensure patient is improving.

State of Hawaii Department of Health	Emergency Medical Services System	
Approved By: Donald C. Fancher, M.D.		Effective Date: November 1, 2001
Subject: Summary of Bioterrorism Incident Mass Prophylaxis Recommendations		Review Date: November 30, 2002

Summary of Bioterrorism Incident Mass Prophylaxis Recommendations

DISEASE	**PROPHYLAXIS OF CHOICE**	**ALTERNATIVE #1**	**ALTERNATIVE #2**	**DURATION**
Anthrax	Ciprofloxacin plus Anthrax Vaccine	Doxycycline plus Anthrax Vaccine	Amoxicillin* plus Anthrax Vaccine	60 days with antibiotic alone; or 30 days with antibiotic plus vaccine
Brucellosis	Doxycycline plus Rifampin	Trimethoprim-sulfamethoxazole plus Rifampin	Ofloxacin plus Rifampin	3 to 6 weeks
Plague	Doxycycline	Ciprofloxacin	None	7 days
Smallpox	Vaccinia Virus Vaccine			One Vaccination
Tularemia	Doxycycline	Ciprofloxacin	None	14 days

INDICATIONS

1. The person has had a confirmed or highly suspected exposure to aerosolized *Bacillus anthracis* spores following a BT incident as determined by the Director of Health;

2. The Director of Health has activated the DOH Emergency Operations Plan for mass antibiotic prophylaxis and immunization; and

3. Issues a signed memorandum ordering anthrax antibiotic prophylaxis and vaccination.

MANAGEMENT OF EXPOSED PEOPLE

1. All exposed people should be identified, and interviewed to detect any additional cases.

2. People having symptoms attributable to anthrax should be sent to Triage and Referral Centers for definitive treatment.

3. People eligible for antibiotic prophylaxis and vaccination should sign an informed consent form, and receive a patient information sheet about the antibiotics or vaccine before the medication or vaccine is administered.

4. **Antibiotics**

   a. Prophylaxis for asymptomatic patients with confirmed or suspected exposure to *Bacillus anthracis* spores can be achieved with a 60 day course of either ciprofloxacin or doxycycline.

   b. Ciprofloxacin is the treatment of choice for initial anthrax post-exposure prophylaxis during a BT event for adults, children, and pregnant women. If ciprofloxacin administration is contraindicated, then doxycycline is the alternative choice. If the specific *B. anthracis* strain used in the BT event is proven to be susceptible to penicillin, then amoxicillin may be used. Refer to section 4-d for antibiotic prophylaxis choices.

a. Exposed persons will be provided with a one-week supply of ciprofloxacin (14 doses), or an alternative antibiotic, and instructed to return in one week to receive additional antibiotic supplies. Antibiotics will be dispensed in one-week increments until it is certain that enough antibiotics are available to treat all exposed individuals. Each week the person will be monitored for the presence of anthrax symptoms, adverse reactions to the antibiotic, and any needed modifications made in the antibiotic choice, dose, or schedule.

b. Antibiotic Prophylaxis Following the Intentional Release of Anthrax Spores in a Community (Source: Reference #11)

PATIENT CATEGORY	**PROPHYLACTIC ANTIBIOTIC THERAPY OF CHOICE ***	**ALTERNATIVE THERAPY†**	**DURATION (DAYS)**
Adult	**Ciprofloxacin** 500 mg by mouth every 12 hours	**Amoxicillin** 500 mg every 8 hours; or **Doxycycline** 100 mg by mouth ever 12 hours	60
Children§	**Ciprofloxacin** 10-15 mg/kg by mouth every 12 hours. Do not to exceed 1 gram/day.	Weight ≥ 20 kg: A **moxicillin** 500 mg by mouth every 8 hours. Weight < 20 kg: A**moxicillin** 25 mg/kg every 8 hours. or **Doxycycline**§	60
Pregnant women ‡	**Ciprofloxacin** 500 mg by mouth every 12 hours	**Amoxicillin** 500 mg by mouth every 8 hours	60
Immunosuppressed	**Same as above**	**Same as above**	60

* For people with chronic renal failure or people > 65 years of age, reduce the dose of ciprofloxacin by 50% and consult the patient's personal physician for monitoring of drug therapy.

† Do not use amoxicillin until antibiotic susceptibility tests confirm that the anthrax strain is susceptible to penicillin.

§ Doxycycline can be used in children during an anthrax outbreak if antibiotic susceptibility tests, exhaustion of drug supplies, or history of allergy preclude use of amoxicillin and ciprofloxacin. For children heavier than 45 kg, use adult dosage. For children less than or equal to 45 kg, use 2.5 mg/kg of doxycycline by mouth every 12 hours.

‡ Balancing the risks of an anthrax infection with those of antibiotic use in pregnancy, it is recommended to use ciprofloxacin until antibiotic susceptibility tests confirm amoxicillin (penicillin) sensitivity of the anthrax strain.

1. **Anthrax Vaccine**

   a. Post-exposure anthrax vaccination is indicated for individuals exposed to aerosolized *B. anthracis* spores following a bioterrorism event.

   b. Post-exposure vaccination following an anthrax BT event along with antibiotic administration is recommended to protect against residual retained spores.

   c. If a person has received 3 doses of anthrax vaccine, then the total duration of antibiotic prophylaxis can be reduced to 30 days.

   d. Priority List:

      1. Exposed individuals
      2. Essential service personnel
      3. General population (if warranted)

   e. Dosage, Route, and Schedule of Administration for Primary Immunization (Reference 12):

DOSE	ROUTE	SCHEDULE	MINIMUM INTERVAL
0.5 mL	**Subcutaneously**	**SIX DOSES** **0, 2, and 4 weeks**; **6, 12,and 18 months**	 **2 weeks** **6 months**

   f. Individuals previously vaccinated with fewer than three doses will receive a single 0.5 mL booster subcutaneously.

   g. Dosage forms:

      1. Injection: 5 mL (10 doses each)

      2. The only human anthrax vaccine in current use in the U.S. is manufactured by BioPort Corporation, 3500 N. Martin Luther King , Jr. Boulevard, Lansing MI 48909.

      3. The anthrax vaccine is a sterile cell free filtrate of cultures from an avirulent nonencapsulated anthrax strain.

h. Contraindications:

1. Hypersensitivity to the vaccine or its components.
2. Previous history of anthrax infection

i. Precautions:

3. Pregnancy: (In the event of known or highly suspected exposure to aerosolized anthrax spores, the benefit of anthrax immunization far outweighs any potential risk to mother and fetus).
4. Moderate or severe acute illness

j. Adverse Reactions:

5. Local pain, pruritis, nodules, or inflammation at the site of injection
6. Malaise, chills, fever, and lassitude
7. Myalgia, nausea, arthralgia, headache
8. Anaphylaxis (rare)

k. Reporting of Adverse Events:

9. Adverse events occurring after administration of anthrax vaccine should be reported to the Vaccine Adverse Events Reporting System (VAERS).
10. VAERS forms can be obtained by calling 800-822-7967
11. VAERS information is available at http://www.vaers.org.

Anthrax Vaccine Information Brochure For Health Care Professionals

What is the threat?

Several countries around the world maintain biological weapons. Use of these weapons could cause widespread illness among unprotected groups of people. Anthrax is the biological weapon most likely to be encountered because it is highly lethal, easy to produce in large quantities, relatively easy to develop as a weapon, easily spread over a large area, and easily stored and dangerous for a long time. There is reason to believe that you may have been exposed to anthrax either through a natural exposure, or through an act of biological terrorism or war.

What is anthrax?

Anthrax is a disease normally associated with plant-eating animals such as sheep, goats, cattle, and swine. It is caused by the bacteria *Bacillus anthracis.* Once common where livestock were raised, it is now controlled through animal vaccination programs. Anthrax still occurs in countries where animals are not vaccinated, mainly in Africa and Asia. It does occur infrequently in the United States. Human infection with anthrax usually results from direct contact with infected animals, or animal products such as wool, meat or hides. However, when anthrax is used as a biological weapon, breathing anthrax that is released into the air infects people. Inhalational anthrax is the disease that results from breathing anthrax. Symptoms of inhalation anthrax can begin as early as 24 hours after breathing anthrax spores. Initial symptoms include: fever, cough, and weakness and usually progress to breathing problems, shock, and death.

Why Vaccinate?

Vaccines prevent illness by stimulating the body's natural disease-fighting abilities. They are among the most powerful tools developed by modern medicine for keeping people healthy. Vaccines are routinely used in the United States to protect against diseases such as mumps, measles, whooping cough, and polio.

What is the anthrax vaccine?

Anthrax vaccine is a sterile product made from filtrates of cultures of a strain of the anthrax organism that does not cause disease. The vaccine contains no living or dead anthrax organisms. The anthrax vaccine is not new. Human anthrax vaccines were developed in England and the U.S. in the 1950s and early 1960s. The anthrax vaccine you will receive was licensed by the FDA in 1970 and has been manufactured by the Michigan Biologic Products Institute (MBPI) under Establishment License No. 99. BioPort purchased MBPI in September of 1998 and will continue to manufacture the anthrax vaccine.

It has been safely and routinely administered in the United States to veterinarians, laboratory workers, and livestock handlers for more than twenty-five years.

Anthrax Vaccine Information Brochure For Health Care Professionals Page 2

Facts about the anthrax vaccine?

- Vaccination is a critical part of protection against infection and disease.
- Manufactured in the United States.
- Safely used for more than 25 years.
- As with other vaccinations, pain may occur at the site of injection.
- Temporary side effects (sore arm, redness, slight swelling, and a small nodule or knot under the skin) may occur.
- No known long term side effects.
- Six shots are required over 18 months, followed by an annual booster for routine prevention.
- In a post-exposure situation, people that have never received an anthrax vaccine will receive a primary series of immunization consisting of three shots given at 0, 2, and 4 weeks administered subcutaneously.
- Individuals previously vaccinated with fewer than three doses will receive a single 0.5 ml booster dose subcutaneously.

Is this an experimental vaccine?

No, anthrax vaccine has been FDA approved since 1970.

Is the vaccine safe?

Yes, this vaccine has been safely and routinely administered in the U.S. to veterinarians, laboratory workers, and livestock handlers since 1970. The manufacturer, the Michigan Biologic Products Institute, has received no reports of serious adverse effects.

Is there anyone who should not receive the vaccine?

Anthrax vaccine should not be administered to anyone who has a known history of allergic reaction to a prior anthrax shot.

What about pregnancy?

There is no scientific evidence to suggest that the vaccine is harmful during pregnancy. The vaccine is usually not administered during pregnancy during routine situations. However, if a pregnant woman is exposed to aerosolized anthrax spores, the benefits of anthrax immunization far outweighs any potential risk.

What other medical conditions could affect the use of this vaccine?

In the event of an exposure to aerosolized anthrax spores, only allergy to the vaccine would be a reason not to receive the protection from the vaccine.

Anthrax Vaccine Information Brochure For Health Care Professionals Page 3

How many shots will be given?

- Six shots are required over 18 months, followed by an annual booster for routine prevention.
- In a post-exposure situation, people that have never received an anthrax vaccine will receive a primary series of immunization consisting of three shots given at 0, 2, and 4 weeks administered subcutaneously.
- Individuals previously vaccinated with fewer than three doses will receive a single 0.5 ml booster dose subcutaneously.

What are the side effects?

As with other vaccinations, pain may occur at the site of injection. Temporary side effects (sore arm, redness, and slight swelling may occur. The vaccine has been in use since 1970 with no known long-term side effects.

THE ORDER TO ADMINISTER VACCINIA VIRUS VACCINE IS VALID WHEN THE DIRECTOR OF HEALTH:

1. Declares that a mass casualty bioterrorism incident involving smallpox has occurred;
2. Has identified the population at risk for exposure to smallpox for vaccination;
3. Has activated the State of Hawaii DOH Emergency Operations Plan and bioterrorism mass prophylaxis and immunization plans;
4. Confirms that a supply of smallpox vaccine is available for civilian use;
5. And issues a signed memorandum ordering smallpox vaccination.

INDICATION

Post-exposure vaccination for individuals exposed to a case of smallpox or aerosolized variola virus following a bio-terrorism event.

PRIORITY LIST

1. Exposed individuals
2. Essential Service Personnel
3. General Population (if warranted)

DOSAGE, ROUTE, AND METHOD OF ADMINISTRATION

1. Vaccination is performed by cutaneous inoculation of vaccinia virus and scarification using the multiple-puncture technique with a bifurcated needle.

2. A sterile bifurcated needle is inserted into an ampoule of reconstituted vaccine and, on withdrawal, a droplet of vaccine sufficient for vaccination containing an infectious dose of about 2×10^5 plaque forming units of vaccine strain vaccinia virus is held by capillarity attraction between the two tines of the needle

3. The needle is held at right angels to the skin.
4. The wrist of the vaccinator rests against the arm.
5. Fifteen perpendicular strokes of the needle are rapidly made in an area of about 5 mm in diameter that penetrates into the epidermis of the deltoid region of the arm.
6. The strokes should be vigorous enough that a trace of blood appears at the vaccination site after 15 to 30 seconds.
7. After vaccination, excess vaccine should be wiped from the site with sterile gauze. The gauze should then be discarded in a hazardous waste receptacle.
8. The site should be covered with a loose, non-occlusive bandage to deter the individual from touching the site and perhaps transferring virus to other parts of the body. The vaccination site should be covered at all times with a porous bandage until the scab has separated and the underlying skin has healed. An occlusive bandage should not be used. The site should be kept dry. When the client bathes, the site should be covered with an impermeable bandage.
9. Two to five days after primary vaccination, a papule forms and then becomes a vesicle two to three days later. The vesicle reaches a maximum size by day 8 to 10. A scab forms within two weeks leaving behind a scar when healing is complete. Mild fever and localized (regional) swollen lymph glands are often present during the first two weeks after vaccination.

Precautions

1. Before administering the vaccine, a careful history should be performed to document the absence of contraindications to vaccination among both clients and their household contacts.
2. Eczema, a history of eczema, or immunodeficiency are contraindications to smallpox vaccination.
3. Vaccinia vaccine should not be administered if the above conditions are present among clients or their household contacts.

Contraindications

1. Hypersensitivity to the vaccine or its components including persons allergic to polymyxin B sulfate, streptomycin sulfate, chlortetracycline hydrochloride, or neomycin sulfate.
2. Immunodeficiency including HIV infection, and transplant recipients.
3. A history or presence of eczema, or presence of active skin conditions such as burns, atopic dermatitis, impetigo, or varicella zoster.
4. Pregnancy.

Complications of Vaccination:

1. Postvaccinial encephalitis.
2. Vaccinia necrosum (progressive vaccinia).
3. Eczema vaccinatum.
4. Generalized vaccinia.
5. Accidental inoculation of vaccine to other sites or unvaccinated contacts.
6. Bullous erythema multiforme and uriticarial and erythematous eruptions.

Treatment of Vaccine Complications

1. Vaccinia Immune Globulin (VIG): 0.6 mL/kg IM
2. The standard VIG dose may be large (a total dose of about 40 mL in 70 kg adults). Therefore, the dose may need to be divided and given over a 24 to 36 hour period. Doses may be repeated, usually at intervals of 2-3 days, until recovery begins. VIG is effective in reducing the morbidity and mortality from vaccinia necrosum, eczema vaccinatum, severe cases of generalized vaccinia, and possibly ocular inoculation. It is of no benefit for the treatment of postvaccinial encephalitis.

VIG and Vaccinia Virus Vaccine are only available through the CDC (404-639-3670).

Vaccinia (Smallpox) Vaccine

What You Need To Know

WHAT IS SMALLPOX?

Smallpox is a serious highly infectious disease that affects humans. A virus called variola causes smallpox. This disease was eradicated from the world through a worldwide vaccination program. There has been no natural case of smallpox reported on earth since 1977.

Smallpox is initially characterized by the sudden onset of chills, high fever, headache, backache, and muscle aches with the subsequent development of a widespread skin rash. The rash consists of pimples that eventually blister, produce pus, and form pockmarks.

Smallpox is spread from person to person. The attack rate (spread) among contacts of smallpox is about 50%. Today, the only way a person could "catch" smallpox is by accidental exposure with the virus in a smallpox research laboratory; intentional release of an aerosol containing the smallpox virus as a result of a bio-terrorism event; or from contact with a person that developed smallpox following such an exposure.
If the smallpox virus is used in a bio-terrorism incident, the virus would most likely be disseminated in an aerosol cloud, and exposed individuals would breathe the virus into their lungs, and be spread throughout the body eventually producing smallpox disease. Secondary cases would arise in the community from person to person spread of the virus. Smallpox is deadly, and up to 40 % of smallpox cases will die. There is no known treatment for smallpox.

WHAT IS THE VACCINIA (SMALLPOX) VACCINE?

Vaccinia vaccine, previously known as smallpox vaccine, is highly effective in producing immunity (protection) to smallpox. Because of the low risk of contracting smallpox, the routine use of vaccinia vaccine in the United States was discontinued after 1971.

The vaccinia vaccine protection against smallpox lasts about 10 years. The opinion of public health experts is that almost all of the United States population is now susceptible to the smallpox virus.
The vaccinia vaccine licensed in the United States contains live vaccinia virus, derived from the New York City Board of Health strain of vaccinia. Vaccine is administered using the multiple puncture technique with a bifurcated needle. It produces a usually harmless vaccinia virus infection in the vaccine recipient that also leads to greater than 95% protection against the deadly smallpox virus.

YOU ARE BEING OFFERED IMMUNIZATION WITH VACCINIA VIRUS BECAUS E THERE IS EITHER CONFIRMATION OR STRONG EVIDENCE THAT YOU HAVE BEEN EXPOSED TO SMALLPOX!

WHO SHOULD RECEIVE VACCINIA VIRUS?

The United States Public Health Service recommends vaccinia vaccine for the following persons:

1. Laboratory workers who directly handle animals, or microbial cultures contaminated or infected with vaccinia virus, or other smallpox-related viruses;

2. Individuals exposed to aerosols containing variola virus (smallpox) virus, or exposed to cases of smallpox as the result of a bioterrorism incident.

WHAT ARE THE BENEFITS OF VACCINIA VACCINATION?

The vaccine will be highly successful in preventing smallpox infection in people exposed to the smallpox virus, and in stopping a community wide smallpox outbreak.

WHAT ARE THE RISKS OF VACCINATION?

Successful vaccination, particularly in persons receiving their first dose of vaccine, is associated with tenderness, redness, swelling, and a lesion at the vaccination site, and may cause fever for a few days. The lymph nodes in the armpit of the vaccinated arm may become enlarged and tender. These symptoms are more common in persons receiving their first dose of vaccine than in persons being revaccinated.

The overall risks of serious complications of smallpox vaccination are low, and occur more frequently in persons receiving their first dose of vaccine, and among young children. The most frequent serious complications of vaccination are encephalitis (brain inflammation), vaccinia necrosum (progressive destruction of skin and other tissues at the vaccination site), and eczema vaccinatum (severe and destructive infection of skin affected by eczema or other chronic skin disorder caused by spread of vaccinia virus).

Among persons receiving their first dose of vaccine, the following serious complications have been observed:

1. encephalitis - about one in 300,000 doses.

2. vaccinia necrosum - this complication has been limited to recipients who have abnormalities of their immune system, for whom the vaccine is contraindicated.

3. eczema vaccinatum - this complication has been limited to recipients who have eczema or other chronic skin conditions, for whom the vaccine is contraindicated.

Among persons being revaccinated, the following serious complications have been observed:

1. encephalitis - about one in 200,000 doses.

2. vaccinia necrosum - this complication has been limited to recipients who have abnormalities of their immune system, for whom the vaccine is contraindicated.

3. eczema vaccinatum - this complication has been limited to recipients who have eczema or other chronic skin conditions, for whom the vaccine is contraindicated.

Other less serious complications include:

1. Generalized vaccinia -vaccination lesions developing away from the vaccination site. This occurs in one in 5,000 primary vaccinations and one in 110,000 revaccinations.

2. Accidental transfer of vaccinia from the vaccination site to other parts of the body. This occurs in one in 1,700 primary vaccinations and one in 40,000 revaccinations.

Generalized vaccinia in persons without underlying illness (such as immune deficiency) is generally self limited and requires little or no therapy. Accidental transfer of vaccinia from the vaccination to other parts of the body can be prevented by handwashing after touching the vaccination site.

On rare occasions, almost always after primary vaccination, vaccinia virus has been reported to cause fetal infection after vaccination of a pregnant woman. Fewer than 50 instances of fetal vaccinia are known, but cases have been observed as recently as 1978. Fetal vaccinia usually results in stillbirth or death of the infant shortly after delivery. Vaccinia vaccine is not known to cause congenital malformations.

Because the vaccinia virus is present at the vaccination site, other persons can become infected if they come in direct contact with the vaccinee's lesions. Vaccinees can also transfer virus from the vaccination site to another person by touching the lesion and then touching the other person. The exact risk of infection by such routes of transmission is unknown; however, virus can be cultured from the vaccination site until the skin heals. Most instances of contact transmission of vaccinia do not lead to serious illness in the contact. However, about 30% of contact transmission results in eczema vaccinatum.

WHO SHOULD NOT BE VACCINATED?

1. Persons who have **ever** been diagnosed as having **eczema**, even if the condition is mild or is not presently active.

2. Persons whose **household contacts** have **eczema**, or a **history of eczema**.

3. Persons with diseases or conditions which cause **immunodeficiency**, such as **HIV infection**, leukemia, lymphoma, generalized malignancy, agammaglobulinemia, or therapy with alkylating agents, antimetabolites, radiation, or large doses of corticosteroids.

4. Persons whose **household contacts** have an immunodeficiency disease or therapy listed above.

5. Persons with other acute or chronic skin conditions, such as **atopic dermatitis**, **burns, impetigo, or varicella zoster (shingles)** should not be vaccinated until the condition resolves.

6. Women who are **pregnant**, or who are **planning to become pregnant** within a month following vaccination.

7. Persons with serious, life-threatening allergies to the antibiotics **polymyxin B**, s**treptomycin**, **tetracycline** , or **neomycin**.

WHAT TO LOOK FOR AND DO AFTER THE VACCINATION ?

1. Three to five days following primary vaccination, a small bump develops at the site of vaccination. The bump becomes a blister, which then becomes pus-filled, and reaches its maximum size by 8-10 days. The pus-filled blister dries and forms a scab, which separates by 14-21 days after vaccination, leaving a distinct scar. Vaccinia virus is shed from the site from 4 days following vaccination until the scab separates from the skin. Persons being revaccinated may not develop a blister, and the progression of the lesion at the site of vaccination may be shorter.

2. The objectives in caring for a smallpox vaccination site are to avoid spread of virus from the vaccination site to another area of the body (such as the eyes), to avoid spread to another person, and to keep the area clean and dry.

3. Keep the site covered with a bandage, at all times until the scab has fallen off and the underlying skin is healed. An occlusive (air-tight) bandage should **not** be used.

4. Keep the site dry. When showering, cover the site with plastic and rubber bands or tape the plastic down with adhesive tape to prevent wetting. Do not direct shower water to the vaccinated area. After drying off, replace the plastic cover with a simple bandage.

5. After changing the bandage, or any time the vaccination site is touched, wash your hands thoroughly with soap and water. **This is the most important measure to prevent transmission of vaccinia to another person, or to another part of the body.**

6. Avoid contact with anyone at risk of complications of smallpox vaccination listed above until the scab has fallen off.

WHERE CAN I GET MORE INFORMATION ABOUT VACCINIA VACCINE?

If you have questions about vaccinia vaccination, you should ask your doctor, or the person responsible for vaccination at your health care facility. In December 1991, the United States Public Health Service published its recommendations for the use of vaccinia vaccine in *the Recommendations and Reports* series *of Morbidity and Mortality Weekly Report*. A copy of these recommendations may be obtained by writing to Information Services, National Center for Prevention Services, Mailstop E-06, Centers for Disease Control, Atlanta, Georgia 30333, or by calling (404) 639-1819.

VACCINIA IMMUNIZATION FORM

Form to Consent to Receive Vaccinia Immunization

I have been informed that due to my exposure history, activities or occupation, I am at risk of contracting smallpox. Having been provided information about being immunized against vaccinia and the opportunity to discuss the vaccinia immunization with the public health nurse or physician, I hereby request that I receive vaccinia immunization.

I have thoroughly read the attached materials about vaccinia and the smallpox vaccine, and I understand the contents of these materials. I am satisfied and have no further questions.

I understand that vaccinia immunization: (1**) may** protect me against smallpox only, **not** against other diseases; (2) **does not guarantee** protection against smallpox; (3) may possibly have as-yet undiscovered reactions or long-term effects, some of which could be serious and even life-threatening; (4) may have some as-yet **unknown** or **unproven association** with another disease, or deficiency; (5) may cause side effects including, but not limited to, those described in the attached materials.

I understand that if I request vaccinia immunization, and I am medically eligible to receive it, it will be provided without any cost to me. By signing below, I hereby indicate my desire to be immunized. If I experience complications or side effects, I understand that I should report them immediately to my personal physician or to the Public Health Nursing Branch at 808-_____.

I understand that copies of this form may be kept on file in the Public Health Nursing Branch.

No one has forced me to be immunized or to sign this consent against my will. I do so voluntarily and with full knowledge of its content and meaning. I understand that I may change my mind at any time prior to or during the immunization by signing a Form to Decline Vaccinia Immunization.

Signature:_____ I.D.#:_____

Printed Name:_____

Witness to
Signature:_____Date:_____

VACCINIA (SMALLPOX) IMMUNIZATION FORM

Form to Decline Vaccinia Immunization

I have been informed that I have either been exposed to air-borne variola (smallpox) virus particles, or to an active case of smallpox disease as the result of a bioterrorism event. Having been provided information about being immunized against smallpox and the opportunity to discuss vaccinia immunization with a public health nurse or physician, I choose not to receive vaccinia immunization at this time. The reason I choose not to receive vaccinia immunization is

_____.

I understand that if I request vaccinia immunization, and I am medically eligible to receive it, it will be provided without cost to me. I have read thoroughly the attached materials about the smallpox vaccine and I understand the contents of these materials. I have no further questions.

By signing below, I am confirming either: (a) my desire not to receive vaccinia immunization, or (b) my understanding that based on my medical condition, I am not eligible to receive vaccinia immunization. By signing below, I am also acknowledging that I understand that because I have chosen not to receive immunization or that I have a medical condition that makes me ineligible for immunization, I am at higher risk of contracting smallpox if I am exposed to it. Accordingly, I hereby release The State of Hawaii Department of Health, its officers, employees, and agents, including any physicians or other health care providers, from any liability related to any subsequent exposure I have to the smallpox virus.

I acknowledge that I am signing this Form to Decline Vaccinia Immunization voluntarily and with full knowledge of its contents and meaning. I understand that if I change my mind at any time and decide to receive immunization, and I am medically eligible to receive it, it will be provided at no cost to me.

Signature:_____ I.D.#:_____

Printed Name:_____

Witness to
Signature:_____Date:_____

State of Hawaii Department of Health	Communicable Disease Division Page 1 of 2	
Approved By: Donald C. Fancher, M.D.		Effective Date: November 1, 2001
Subject: **Brucellosis Prophylaxis Protocol**		Review Date: November 30, 2002

INDICATIONS

1. The person has had a confirmed or highly suspected exposure to *Brucella* species following a BT incident as determined by the Director of Health;

2. The Director of Health has activated the DOH Emergency Operations Plan for mass antibiotic prophylaxis; and

3. Issues a signed memorandum ordering brucellosis antibiotic prophylaxis.

MANAGEMENT OF EXPOSED PEOPLE

6. All exposed people should be identified, and interviewed to detect any additional cases.

7. People having symptoms attributable to brucellosis should be sent to Triage and Referral Centers for further diagnosis and treatment.

8. People eligible for antibiotic prophylaxis should sign an informed consent form, or declination form, and receive a patient information sheet about the preventive antibiotics prior to administration.

9. **Antibiotics**

   a. Prophylaxis for asymptomatic adult patients with confirmed or suspected exposure to *Brucella* species can be achieved by administering a combination of **doxycycline plus rifampin** for three week to six weeks.

   b. For pregnant women, and children < 9 years of age **trimethoprim-sulfamethoxazole plus rifampin** for at least three to six weeks is recommended. Refer to section 4-d for antibiotic choices, doses, and schedule.

   c. Exposed persons will be provided with a one-week supply of antibiotics and instructed to return in one week to receive additional antibiotic supplies. Antibiotics will be dispensed in one-week increments until it is certain that enough antibiotics are available to treat all exposed individuals. Each week the person will be monitored for the presence of symptoms, adverse reactions to the antibiotic, and any needed modifications made in the antibiotic choice, dose, or schedule.

d. Management of cases/contacts/exposed individuals (reference #7)

PATIENT CATEGORY	**PROPHYLAXIS†**
Adult	Option 1: **Doxycycline** 100 mg orally bid and **rifampin** 600 orally daily for three to six weeks; Or Option 2: **Ofloxacin** 400mg plus **rifampin** 600mg daily for three to six weeks.
Children§	For children > 9 years of age **use adult regimen**. For children < 9 years of age, **trimethoprim-sulfamethoxazole** 5mg / 25 mg /kg every 12 hours daily plus **rifampin** 10 mg/kg (maximum 300 mg every 12 hours) for at least 3 weeks to 6 weeks.
Pregnant women	**Trimethoprim-sulfamethoxazole** 5mg / 25 mg plus **rifampin** 600 mg every 12 hours for at least three to six weeks.
Immuno-suppressed	Same as for normal adults

§Doxycycline could be used in children younger than 9 years of age during a bioterrorism attack if antibiotic susceptibility testing, exhaustion of drug supplies, or allergic/adverse reaction preclude the use of alternative agents. For children < 45 kg, use 2.5 mg /kg doxycycline every 12 hours. For children heavier than 45 kg use an adult dose. Pediatric use of tetracyclines and flouroquinolones is associated with adverse effects that must be weighed against the risk of developing a lethal disease.

† All regimens are administered orally. Reference #7.

INDICATIONS

1. The person has had a confirmed or highly suspected exposure to *Yersinia pestis* following a BT incident as determined by the Director of Health;

2. The Director of Health has activated the DOH Emergency Operations Plan for mass antibiotic prophylaxis; and

3. Issues a signed memorandum ordering plague antibiotic prophylaxis.

MANAGEMENT OF EXPOSED PEOPLE

1. All exposed people, or contacts of a case of plague should be identified, and interviewed to detect any additional cases.

2. People having symptoms should be sent to Triage and Referral Centers for further diagnosis and treatment.

3. All contacts of plague patients should be instructed to have their temperature taken twice daily and to report fever or other symptoms. Surveillance may terminate seven days after the last contact with the patient.

4. People eligible for antibiotic prophylaxis should sign an informed consent form or declination form, and receive a patient information sheet about the preventive antibiotics prior to administration.

5. <u>Antibiotics</u>

a. The choice of antibiotic for prophylaxis or for use in face-to-face contacts of patients with pneumonic plague, or after a suspected or confirmed plague bioterrorism attack, is **doxycycline** 100 mg orally twice daily, for 7 days, or for the duration of risk exposure, whichever is longer.

b. **Ciprofloxacin** 500 mg orally twice daily, for 7 days, or for the duration of the exposure, whichever is longer is an acceptable alternative agent for prophylaxis.

c. Post-exposure prophylaxis for plague: (Reference #9)

Patient Category	Post-Exposure Prophylaxis
Adult	**Doxycycline** 100 mg orally twice daily for 7 days, or **Ciprofloxacin** 500 mg orally twice daily for 7 days.
Children§	**Doxycycline** §, or **Ciprofloxacin** 10-15 mg/kg every 12 hours not to exceed 1 gram per day. Prophylaxis duration is 7 days
Pregnant women†	**Doxycycline** 100 mg orally twice daily for 7 days, or **Ciprofloxacin**† 500 mg orally twice daily for 7 days.
Immuno-suppressed	Same as for normal adults

§ Doxycyline could be used in children during a bioterrorism attack of plague. For children < 45 kg use 2.2 mg/kg orally twice daily with a maximum dose of 200mg/day. For children > 45 kg give adult dose. Pediatric use of tetracyclines and fluoroquinolones may be associated with adverse effects that must be weighed against the risk of developing a lethal disease.

† Ciprofloxacin may be used in pregnant women and children during or following a bioterrorism attack due to plague when in the judgement of the attending physician the risk of acquiring or dying from plague is greater than the unknown consequences of the use of ciprofloxacin.

Reference #9.

State of Hawaii Department of Health	Emergency Medical Services System Page 1 of 2	
Approved By: Donald C. Fancher, M.D.		Effective Date: November 1, 2001
Subject: **Tularemia Prophylaxis Protocol**		Review Date: November 30, 2002

INDICATIONS

1. The person has had a confirmed or highly suspected exposure to *Francisella tularensis* following a BT incident as determined by the Director of Health;

2. The Director of Health has activated the DOH Emergency Operations Plan for mass antibiotic prophylaxis; and

3. Issues a signed memorandum ordering tularemia antibiotic prophylaxis.

MANAGEMENT OF EXPOSED PEOPLE

1. All exposed people should be identified, and interviewed to detect any additional cases.

2. People having symptoms attributable to tularemia should be sent to Triage and Referral Centers for further diagnosis and treatment.

3. People eligible for antibiotic prophylaxis should sign an informed consent form, and receive a patient information sheet about the preventive antibiotics prior to administration.

4. **Antibiotics**

   a. Prophylaxis for asymptomatic patients with suspected exposure to aerosolized *F. tularensis* can be achieved with a 14 day course of doxycycline 100 mg orally twice daily.

b. Post-exposure prophylaxis for tularemia (reference #7):

PATIENT CATEGORY	**PROPHYLAXIS**
Adult	Doxycyline 100 mg orally twice daily for 14 days, or Tetracycline 500 mg orally qid for 14 days.
Pediatric§	Doxycycline § Ciprofloxacin† 10-15 mg/kg orally every 12 hours not to exceed 1 gram per day.
Pregnancy†	Ciprofloxacin† 500 mg orally twice daily for 14 days.
Immunosuppressed	Same as above
§ The use of doxycycline in pediatric patients < 7 years of age may be associated with adverse effects. In a bioterrorism incident the use of doxycycline to prevent a potentially lethal disease must be weighed against the potential side effects of the antibiotic. For children < 45 kg use 2.2 mg/kg orally twice daily with a maximum dose of 200mg/day. For children > 45 kg give the adult dose.	
† Use of ciprofloxacin is based on successful use in treating 6 cases in adults. The use of ciprofloxacin in pregnancy or pediatrics is not usually recommended, and the potential benefit in preventing a potentially lethal disease must be weighed against the unknown risk in pregnancy or the pediatric age group. Tetracyclines are contraindicated in pregnancy.	

Reference #7.

State of Hawaii Department of Health	Emergency Medical Services System Page 1 of 3	
Approved By: Donald C. Fancher, M.D.		Effective Date: November 1, 2001
Subject: **Antibiotic Information For Practitioners:** **CIPROFLOXACIN**		Review Date: November 30, 2002

A. Indications

1. Post-exposure antibiotic mass prophylaxis antibiotic of choice for individuals exposed to aerosolized *B. anthracis* spores following a bioterrorism incident;
2. Alternative post-exposure antibiotic mass prophylaxis antibiotic of choice for individuals exposed to aerosolized *Brucella species* (brucellosis), *Yersinia pestis* (plague), and *Francisella tularensis* (tularemia).

B. Dosage, Route, and Schedule of Administration of Ciprofloxacin

Adults: Ciprofloxacin 500 mg by mouth every 12 hours.

Children: Ciprofloxacin 20-30 mg/kg per day by mouth divided into two daily doses not to exceed 1 gram per day.

Pregnant Women: Ciprofloxacin 500 mg by mouth every 12 hours.

C. Duration of Ciprofloxacin Prophylaxis

DISEASE	DURATION
Anthrax with < 3 doses of Anthrax vaccination	60 days
Anthrax with at least 3 doses of Anthrax vaccination	30 days
Brucellosis	3 weeks to 6 weeks
Plague	7 days
Tularemia	14 days

D. Contraindication

Hypersensitivity to ciprofloxacin or other quinolones.

E. Precautions

1. Usually not recommended in **children < 18 years of age**, but can be administered in the face of a life-threatening exposure to a potentially fatal biological pathogen or disease.

2. Children and adults with **chronic renal disease**, **psychiatric disorders** on psychotropic drugs, or **patients taking theophylline** preparations should be referred to a physician if at all possible for further management in treatment prior to starting ciprofloxacin prophylaxis.

3. Use with caution in known or suspected **central nervous system disorders** (e.g. **seizure disorders)**

4. Prolonged use may result in **superinfections**.

5. Discontinue use immediately with signs of **tendon inflammation or tendon pain**.

6. Patients taking **theophylline preparations** concurrently with ciprofloxacin must either reduce the dose of theophylline or have serum levels of theophylline monitored. In this case, consult with the person's private physician before administering ciprofloxacin.

7. **Chronic Renal Failure**: Consult with the person's physician. Dosage needs to be reduced depending upon the degree of renal failure.

8. Avoid drinking or eating **caffeine**-containing products while taking ciprofloxacin.

9. Use cautiously with **clozapine** and other **psychotropic drugs**; monitor closely for adverse effects.

10. **Age >65 years**: Geriatric patients may have reduced renal function. Therefore, reduce the ciprofloxacin dose to 500 mg every 24 hours.

F. Adverse Reactions

1. One percent to ten percent of patients will experience headache, restlessness, nausea, diarrhea, vomiting, abdominal pain, or rash.

2. Less than 1% of patients will experience dizziness, confusion, seizures, anemia, increased liver enzymes, tremor, arthralgia, ruptured tendons, or acute renal failure.

G. Drug Interactions

1. Enteral feedings may decrease ciprofloxacin plasma concentrations. Ciprofloxacin should not be administered with enteral feedings. The feedings need to be discontinued for two hours prior to, and after, ciprofloxacin administration.

2. Aluminum/magnesium products, didanosine, and sucralfate may decrease absorption of ciprofloxacin if administered concurrently. Administer ciprofloxacin two hours before, or 4 hours after, the dose of these agents. Withhold antacids for two hours after giving ciprofloxacin.

3. Calcium, iron, zinc, and multivitamins with minerals may decrease absorption of ciprofloxacin significantly if administered concurrently. Administer ciprofloxacin two hours before, or at least two hours after the dose of these agents.

4. Caffeine and theophylline can increase central nervous system stimulation when administered concurrently with ciprofloxacin.

5. Cyclosporine may increase serum creatinine levels when administered concurrently with ciprofloxacin. Cyclosporine serum levels need to be monitored when the patient is taking ciprofloxacin. Consult with the patient's personal physician.

J. Dosage Adjustment in Renal Impairment

For people with chronic renal failure, the dose of ciprofloxacin must be reduced to 500 mg every 24 hours, or as prescribed by the patient's personal physician.

K. Dosage Forms For Use in Mass Prophylaxis

Suspension, oral, as hydrochloride: 250 mg/5mL (100 mL); 500 mg/5mL (100 mL)
Tablet, as hydrochloride: 100 mg, 250 mg, 500 mg, 750 mg.

A. Indications

1. Post-exposure antibiotic mass prophylaxis agent of choice for individuals exposed to aerosolized *Brucella* species (brucellosis), *Yersinia pestis* (plague), and *Francisella tularensis* (tularemia).

2. Alternate post-exposure antibiotic mass prophylaxis agent of choice for individuals exposed to aerosolized *B. anthracis* spores following a bioterrorism incident.

B. Dosage, Route, and Schedule of Administration of Doxycycline

PATIENT CATEGORY	PROPHYLAXIS
Adults	Doxycycline 100 mg by mouth every 12 hours
Children > 8 years of age	Doxycycline 100 mg by mouth every 12 hours
Children < 8 years of age	Ordinarily contraindicated*
Pregnant women	Ordinarily contraindicated†

* Doxycycline can be used in children < 8 years of age for treatment or prophylaxis during a bioterrorism attack. Pediatric use of tetracyclines may be associated with adverse effects that must be weighed against the risk of developing a lethal disease if alternative antibiotics are not available. If doxycycline is determined to be necessary, the dose in children < 8 years of age is 2.5 mg/kg by mouth every 12 hours, not to exceed 100 mg every 12 hours.

† Doxycycline can be used in pregnant women during a bioterrorism attack if it is determined that the risk of dying from a potentially lethal disease outweighs the risk of adverse reactions to the pregnant woman or the fetus if alternative agents are not available. If doxycycline is determined to be necessary, the dose is 100 mg every 12 hours by mouth.

C. Duration of Doxycycline Prophylaxis

Disease	Duration
Anthrax with < 3 doses of Anthrax vaccination	60 days
Anthrax with at least 3 doses of Anthrax vaccination	30 days
Brucellosis	3 weeks to 6 weeks
Plague	7 days
Tularemia	14 days

D. Contraindication

1. Hypersensitivity to doxycycline, tetracycline, or any component.
2. Children < 8 years of age unless determined to be necessary during a bioterrorism attack.
3. Severe hepatic dysfunction.

E. Precautions

1. Tetracyclines use during tooth development may cause permanent discoloration of the teeth and enamel hypoplasia.
2. Prolonged use may result in superinfection.
3. Photosensitivity reactions may occur with this drug so avoid prolonged exposure to sunlight or tanning equipment.

F. Adverse Reactions

1. Discoloration of teeth in children < 8 years of age.
2. Esophagitis in less than ten percent of people..
3. Increased intracranial pressure, bulging fontanels in infants, rash, photosensitivity, nausea, diarrhea, neutropenia, eosinophilia, hepatotoxicity, or phlebitis in < 1% of patients.

G. Drug Interactions

1. Decreased effect with antacids containing aluminum, calcium, or magnesium.
2. Iron and bismuth subsalicylcate may decrease doxycycline bioavailability.
3. Barbiturates, phenytoin, and carbamazepine decrease doxycycline's half-life.
4. There is an increased effect of warfarin with doxycycline use.
5. Absorption from the gastrointestinal tract can be reduced by food or milk by 20%.

H. Dosage Adjustment in Renal Impairment

For people with chronic renal failure and a creatinine clearance of < 10 mL/min, the dose of doxycycline is 100 mg every 24 hours.

I. Dosage Forms (Oral):

1. Capsule, as hyclate:
    a. Doxychel®, Vibramycin®: 50 mg
    b. Doxy®, Doxychel®, Vibramycin®: 100 mg
    c. Periostat™: 20 mg

2. Capsule, as monohydrate (Mododox®): 50 mg, 100 mg

3. Capsule, coaged pellets, as hyclate (Doryx®): 100 mg

4. Powder for oral suspension, as monohydrate (raspberry flavor) (Vibramycin®): 25 mg/5mL (60 ML)

5. Syrup, as calcium (raspberry-aplle flavor) (Vibramycin®): 50 mg/mL (30 mL, 473 mL)

6. Tablet, as hyclate:
    a. Doxychel®: 50 mg
    b. Bio-Tab®, Doxychel®, Vibra-Tabs®: 100 mg

State of Hawaii Department of Health	Emergency Medical Services System Page 1 of 2	
Approved By: Donald C. Fancher, M.D.		Effective Date: November 1, 2001
Subject: **Antibiotic Information For Practitioners:** **AMOXICILLIN**		Review Date: November 30, 2002

A. Indications

Amoxicillin is an alternate post-exposure antibiotic mass prophylaxis antibiotic of choice for individuals exposed to *confirmed* penicillin susceptible aerosolized *B. anthracis* spores following a bioterrorism incident.

B. Dosage, Route, and Schedule of Administration

PATIENT CATEGORY	PROPHYLAXIS
Adults	Amoxicillin 500 mg by mouth every 8 hours.
Children $\geq$ 20 kg.	Amoxicillin 500 mg by mouth every 8 hours.
Children < 20 kg.	Amoxicillin 25 mg/kg by mouth every 8 hours.
Pregnant Women	Amoxicillin 500 mg by mouth every 8 hours.

C. Duration of Amoxicillin Prophylaxis

DISEASE	DURATION
Anthrax with < 3 doses of Anthrax vaccination	60 days
Anthrax with at least 3 doses of Anthrax vaccination	30 days

D. Contraindication

Hypersensitivity to amoxicillin, penicillin, or the penicillin class of antibiotics.

E. Precautions

1. A low incidence of cross-allergy exists with other beta-lactam antibiotics and cephalosporins.
2. A high percentage of patients with infectious mononucleosis have developed rash during therapy with amoxicillin.

F. Adverse Reactions

1. Fever, urticaria, rash, and allergic reactions occur in 1% to 10% of patients.

2. Seizures, anxiety, confusion, hallucinations, depression, nausea, vomiting, leukopenia, neutropenia, thrombocytopenia, jaundice, and/or interstitial nephritis occur in < 1% of patients.

G. Drug Interactions

1. Efficacy of oral contraceptives may be reduced.
2. Disulfiram, or probenecid may increase amoxicillin levels.
3. Allopurinol theoretically has an additive potential for causing an amoxicillin rash.

H. Stability

Oral suspension remains stable for 7 days at room temperature or 14 days if refrigerated. Unit dose antibiotic oral syringes are stable for 48 hours.

I. Dosing Interval in Renal Impairment

1. For patients having chronic renal failure with creatinine clearance between 10-50 mL/minute, lengthen the dosing interval of the standard amoxicillin dose to every 12 hours.

2. For patients having chronic renal failure with creatinine clearance < 10 mL/minute, lengthen the dosing interval of the standard amoxicillin dose to every 24 hours.

J. Dosage Forms

1. Capsule, as trihydrate: 250 mg, 500 mg.

2. Powder for oral suspension, as trihydrate: 125 mg/5mL (5 mL, 80 mL, 100 mL, 150 mL, 200 mL); 250 mg/5mL (5 mL, 80 mL, 100 mL, 150 mL, 200 mL).

3. Powder for oral suspension, drops, as trihydratae: 50 mg/mL (15 mL, 30 mL).

4. Tablet, chewable, as trihydrate: 125 mg, 250 mg.

5. Tablet, film coated: 500 mg, 875 mg.

A. Indications

The combination of **trimethoprim-sulfamethoxazole** and **rifampin** is the post-exposure antibiotic mass prophylaxis of choice for children < 9 years of age as well as pregnant women exposed to aerosolized *Brucella* species (brucellosis).

B. Dosage, Route, and Schedule for Brucellosis Prophylaxis

Patient Category	Trimethoprim-Sulfamethoxazole Dosage	Duration
Adults	One double-strength tablet P.O. every 12 hours.	3 weeks to 6 weeks.
Children > 2 months of age	5 mg (trimethoprim component)/kg P.O. every 12 hours. Do not exceed adult dose.	Same as above.
Pregnant Women	Same as adult dose.	Same as above.

C. Contraindications

1. Hypersensitivity to any sulfa drug.
2. Porphyria.
3. Megaloblastic anemia due to folate deficiency.
4. Infants <2 months of age.
5. Marked hepatic damage.

D. Precautions

1. Do not use near the end of pregnancy (at term) to avoid kernicterus in the newborn.
2. Use during pregnancy only if risks outweigh the benefits. Folic acid metabolism may be inhibited.
3. Use with caution in patients with G-6-PD deficiency, impaired renal function, or hepatic function.
4. Maintain adequate hydration to prevent crystalluria.
5. Adjust dosage in patients with renal impairment.
6. Discontinue use at first sign of rash.
7. Elderly patients appear at greater risk for more severe adverse reactions.

E. Adverse Reactions

1. Allergic skin reactions including rashes and urticaria, photosensitivity, nausea, vomiting, and anorexia occur in >10% of patients.

2. Stevens-Johnson syndrome, toxic epidermal necrolysis (rare), agranulocytosis, aplastic anemia, and hepatitis occur in less than 10% of patients.

3. Confusion, depression, hallucinations, seizures, fever, ataxia, kernicterus in neonates, erythema multiforme, stomatitis, diarrhea, pseudomembranous colitis, pancytopenia, pancreatitis, rhabdomyolysis, thrombocytopenia, megaloblastic anemia, granulocytopenia, aplastic anemia, hemolysis (with G-6-PD deficiency), cholestatic jaundice, interstitial nephritis, and serum sickness have been reported in <1% of patients.

F. Drug Interactions

1. Trimethoprim-sulfamethoxazole decrease the effect of cyclosporines.

2. Phenytoin, cyclosporines, methotrexate, dapsone, sulfonylureas, digoxin, and oral anticoagulants may have increased effects or toxicity.

G. Dosing Adjustment in Renal Failure

1. Creatinine clearance 15-30 mL/minute: Administer 1 double strength tablet every 24 hours or 1 single strength tablet every 12 hours.

2. Creatinine clearance <15 mL/minute: Not recommended.

H. Dietary Considerations

1. Take with a glass of water on an empty stomach.

2. Maintain adequate fluid intake to prevent crystalluria.

I. Dosage Forms

1. The 5:1 ratio of sulfamethoxazole to trimethoprim remains constant in all dosage forms.

2. Suspension, oral: sulfamethoxazole 200 mg and trimethoprim 40 mg per 5 mL (20 mL, 100 mL, 150 mL, 200 mL, 480 mL).

3. Tablet: sulfamethoxazole 400 mg and trimethoprim 80 mg .

4. Tablet, double strength: sulfamethoxazole 800 mg and trimethoprim 160 mg.

State of Hawaii Department of Health	Emergency Medical Services System Page 1 of 2	
Approved By: Donald C. Fancher, M.D.		Effective Date: November 1, 2001
Subject: **Antibiotic Information For Practitioners:** **RIFAMPIN**		Review Date: November 30, 2002

A. Indications

The combination of **trimethoprim-sulfamethoxazole** and **rifampin** is the post-exposure antibiotic mass prophylaxis of choice for children < 9 years of age as well as pregnant women exposed to aerosolized *Brucella* species (brucellosis).

B: Dosage, Route, and Schedule for Brucellosis Prophylaxis

PATIENT CATEGORY	DOSAGE	DURATION
Adults:	Rifampin 300 mg by mouth every 12 hours	3 weeks to 6 weeks
Infants ≤ 1 month old:	Rifampin 5 mg/kg by mouth every 12 hours (maximum 600 mg per day)	Same as above
Infants and children > 1 month of age:	Rifampin 5 mg/kg by mouth every 12 hours (maximum 600 mg per day)	Same as above
Pregnant Women:	Rifampin 300 mg by mouth every 12 hours	Same as above

.

C. Contraindications

History of hypersensitivity to rifampin or any rifamycins.

D. Precautions

1. Use with caution and modify dosage in patients with liver impairment; observe for hyperbilirubinemia; discontinue therapy if clinical symptoms or any signs of significant hepatocellular damage develop.
2. Porphyria exacerbation is possible; use with caution in patients with porphyria.
3. Monitor for compliance and effects including hypersensitivity, and thrombocytopenia.
4. Urine, feces, saliva, sweat, and tears may be discolored to red/orange.
5. Remove soft contact lenses during therapy since permanent staining may occur.
6. Rifampin 600 mg once or twice weekly have been associated with a high incidence of adverse reactions including a flu-like syndrome.
7. Rifampin is best taken on an empty stomach since food decreases the extent of absorption.
8. In patients having hepatic impairment, dose reductions may be necessary to reduce hepatotoxicity.

E. Adverse Reactions

1. Increased hepatocellular enzymes (liver function tests) occur in as many as 14% of patients.

2. Rash, epigastric distress, anorexia, nausea, vomiting, diarrhea, cramps, pseudomembranous colitis, or pancreatitis occurs in 1% to 10% of patients.

3. Other symptoms occur rarely and include flushing, edema headache, drowsiness, dizziness, confusion, numbness, behavioral changes, pruritus, urticaria, pemphigoid reaction, eosinophilia, leukopenia, hemolysis, hemolytic anemia, thrombocytopenia (especially with high-dose therapy), hepatitis, ataxia, myalgia, weakness, osteomalacia, visual changes, and exudative conjunctivitis.

F. Drug Interactions

1. Rifampin induces liver enzymes which may decrease the plasma concentration of verapamil, diltiazem, nifedipine, methadone, digitalis, cyclosporine, corticosteroids, oral anticoagulants, haloperidol, theophylline, barbiturates, chloramphenicol, imidazole antifungals, oral or systemic hormonal contraceptives, acetaminophen, benzodiazepines, hydantoins, sulfa drugs, enalapril, beta-blockers, chloramphenicol, clofibrate, dapsone, disopyramide, mexiletine, quinidine, tocainide, diazepam, doxycycline, fluoroquinolones, levothyroxine, nortriptyline, progestins, tacrolimus, zidovudine, protease inhibitors, and non-nucleoside reverse transcriptase inhibitors.

2. Coadministration with INH or halothane may result in additive hepatotoxicity.

3. Probenecid and trimethoprim-sulfamethoxazole may increase rifampin levels.

4. Antacids may decrease rifampin absorption.

5. Rifampin may cause leukopenia; use caution with clozapine and carbamazepine;

6. Monitor for altered effects when used concurrently with psychotropic drugs.

I. DOSAGE FORMS:

Capsule: 150 mg, 300 mg

State of Hawaii Department of Health	Emergency Medical Services System Page 1 of 2
Approved By: Donald C. Fancher, M.D.	Effective Date: November 1, 2001
Subject: **Antibiotic Information For Practitioners:** **OFLOXACIN**	Review Date: November 30, 2002

A. Indications:

1. The combination of **ofloxacin plus rifampin** is an alternative post-exposure antibiotic mass prophylaxis of choice for individuals exposed to aerosolized *Brucella* species (brucellosis).

2. **Ofloxacin** is an alternative quinolone antibiotic that can be used in lieu of ciprofloxacin in any of the bioterrorism mass prophylaxis protocols if ciprofloxacin is not available.

B. Dosage, Route, and Schedule of Administration:

Standard adult dose: Ofloxacin 400 mg by mouth every 24 hours

C. Duration of Ofloxacin Prophylaxis

DISEASE	DURATION
Anthrax with < 3 doses of Anthrax vaccination	60 days
Anthrax with at least 3 doses of Anthrax vaccination	30 days
Brucellosis	3 weeks to 6 weeks
Plague	7 days
Tularemia	14 days

D. Contraindications

Hypersensitivity to ofloxacin or other members of the quinolone group (e.g. nalidixic acid, oxolinic acid, cinoxacin, norfloxacin, and ciprofloxacin).

E. Precautions

1. Use with caution in patients with epilepsy or other **CNS diseases** that could predispose **seizures.**
2. Use caution with systemic preparation in children <18 years of age due to association of other quinolones with transient **arthropathy**.

3. Discontinue immediately with signs of **tendon inflammation or tendon pain**.
4. Reduce dose in **renal impairment**:

    a. For a creatinine clearance of 10-50 mL/minute administer 200-400 mg every 24 hours.
    b. For a creatinine clearance of <10 mL/minute administer 100-200 mg every 24 hours.

5. Hold **antacids** for 2-4 hours before and after administering ofloxacin.
6. Use caution with **clozapine** and other **psychotropics**; monitor for adverse effects.
7. May cause drowsiness, dizziness, nervousness, insomnia, restlessness, hallucinations, euphoria, depression, panic, and paranoia.

F. Adverse Reactions

1. Chest pain, headache, insomnia, dizziness, fatigue, somnolence, sleep disorders, nervousness, pyrexia, rash/pruritus, diarrhea, vomiting, abdominal cramps, flatulence, abnormal taste, xerostomia , decreased appetite, and/or nausea occurs in 1% to 10% of patients.

2. Syncope, vasculitis, anxiety, cognitive change, depression, dream abnormality, euphoria, hallucinations, vertigo, chills, malaise, extremity pain, weight loss, paresthesia, ruptured tendons, Tourette's syndrome, weakness, photophobia, photosensitivity, hepatitis, decreased hearing acuity, tinnitus, cough, and thirst occur in <1% of patients.

G. Drug Interactions

1. There is decreased absorption of ofloxacin with antacids containing aluminum, magnesium, and/or calcium.

2. Quinolones cause increased caffeine, warfarin, cyclosporine, procainamide, and possibly theophylline levels. Cimetidine and probenecid increase quinolone levels.

H. Dosage Forms

Tablet: 200 mg, 300 mg, 400 mg

PATIENT INFORMATION

Ciprofloxacin

Ciprofloxacin is an antibiotic. You are taking this antibiotic in order to prevent or treat a serious infection.

Take all of your medicine as directed by your doctor or nurse. Do not skip doses. Take all the medicine as directed even if you are feeling better.

Take the medicine on an empty stomach (30 minutes before or 2 hours after meals, dairy products, antacids, or other medication).

Drink at least 6 glasses of water per day unless your health care provider has instructed you to restrict fluid intake.

You may experience nausea, vomiting, or loss of appetite. Small frequent meals, frequent mouth care, sucking lozenges, or chewing gum may help.

Report immediately to your doctor or nurse any signs of skin rash, joint or back pain, or difficulty breathing.

Report immediately to your doctor or nurse any unusual fever or chills; vaginal itching or foul-smelling vaginal discharge; easy bruising or bleeding; or pain, inflammation, or rupture of a tendon.

Inform your doctor or nurse if you are or intend to be pregnant. Do not breast-feed.

PATIENT INFORMATION
Doxycycline

Doxycyline is an antibiotic in the tetracycline family. You are taking this medicine to prevent or treat a serious infection. Take all the medicine as directed, even if you are feeling better.

Avoid alcohol and drink plenty of water (at least 6 glasses of water each day) unless instructed by your doctor to restrict fluid intake.

You may be very sensitive to sunlight; use sunblock, wear protective clothing and eyewear, or avoid exposure to direct sunlight.

You may experience lightheadedness, dizziness, or drowsiness (use caution when driving or engaging in tasks that require alertness until response to drug is known); nausea or vomiting (small frequent meals, frequent mouth care, sucking lozenges, or chewing gum may help); or diarrhea (buttermilk, boiled milk, or yogurt may help).

If you are diabetic, the drug may cause false tests with Clinitest® urine glucose monitoring; use of glucose oxidase methods (Clinistix®) or serum glucose monitoring is preferable.

Immediately report to your doctor or nurse any skin rash or itching, easy bruising or bleeding, yellowing of skin or eyes, pale stool or dark urine, unhealed sores of mouth, itching or vaginal discharge, fever or chills, or unusual cough.

Inform your doctor or nurse if you are or intend to be pregnant. Do not breast-feed. Oral contraceptives effectiveness may be reduced; use appropriate barrier contraceptive measures.

PATIENT INFORMATION

Amoxicillin

Amoxicillin is an antibiotic related to penicillin. You are taking this medicine to prevent, or treat, a serious infection. Take all the medicine as directed, even if you are feeling better.

If you are allergic to penicillin, you are also allergic to amoxicillin. Tell your doctor or nurse if you are allergic to penicillin before you start to take the amoxicillin so that a different type of antibiotic can be prescribed for you.

Amoxicillin may be taken with milk, juice, or food.

You may experience nausea or vomiting (small frequent meals, frequent mouth care, sucking lozenges, or chewing gum help).

If you are diabetic, amoxicillin may cause false tests with Clinitest® urine glucose monitoring; use of glucose oxidase methods (Clinistix®) or serum glucose monitoring is preferable.

This drug may interfere with oral contraceptives; an alternate form of birth control should be used.

Immediately report to your doctor or nurse any rash; unusual diarrhea; vaginal itching, burning, or pain; unresolved vomiting or constipation; fever or chills; unusual bruising or bleeding; or if your condition worsens or does not improve by the time prescription is completed.

PATIENT INFORMATION

Trimethoprim-Sulfamethoxazole

Trimethoprim-Sulfamethoxazole is a sulfa drug. You are taking this antibiotic in order to prevent or treat a serious infection.

You should not take this medication if you have an allergy to sulfa drugs.

Swallow this medicine with 8 oz of water on an empty stomach (1 hour before or 2 hours after meals).

Finish all medication; do not skip doses.

You may experience increased sensitivity to sunlight. Use sunblock, wear protective clothing and dark glasses, and/or avoid direct exposure to sunlight.

By eating small frequent meals, frequent mouth care, sucking lozenges, or chewing gum you may reduce nausea or vomiting.

Report skin rash, sore throat, blackened stool, or unusual bruising or bleeding immediately to your health care provider.

Inform your health care provider if you are or intend to be pregnant.

PATIENT INFORMATION

Rifampin

Rifampin is an antibiotic. You are taking this antibiotic in order to prevent or treat a serious infection.

Take all the medicine as directed. Do not skip doses. Finish all medicines.

Take the medicine on an empty stomach (1 hour before or 2 hours after meals).

Drink plenty of water (at least 6 glasses of water each day) unless instructed by your doctor to restrict fluid intake.

Rifampin will discolor urine, stool, saliva, tears, sweat, and other body fluids reddish-brown. Rifampin can permanently stain clothing or contact lenses. Wear eyeglasses instead of contact lenses while taking rifampin.

Report any of the following symptoms to your doctor or nurse immediately: persistent vomiting; fever, chill, or flu-like symptoms; unusual bruising or bleeding; or other problems you think might be caused by the medicine.

Inform your doctor or nurse if you are or intend to be pregnant or if you are using oral contraceptives (rifampin may reduce the effectiveness of certain oral contraceptives).

PATIENT INFORMATION

Ofloxacin

Ofloxacin is an antibiotic. You are taking this antibiotic in order to prevent or treat a serious infection.

Take all of your medicine as directed. Do not skip doses.

Take the medicine on an empty stomach (1 hour before or 2 hours after meals, dairy products, antacids, or other medication).

Drink at least 6 glasses of water per day unless your doctor has instructed you to restrict fluid intake.

You may experience dizziness, or lightheadedness. Use caution when driving or performing tasks that require alertness until your response to ofloxacin is known.

Nausea, vomiting, or change in taste may be a problem. Small frequent meals, frequent mouth care, sucking lozenges, or chewing gum may help.

Photosensitivity (sunburn or sunrash) is a common problem with this medicine. Use sunscreen, wear protective clothing and eyewear, and avoid direct sunlight while taking this medication.

Report stomach upset or diarrhea, excessive sleepiness, agitation, or tremors, skin rash, changes in vision, difficulty breathing, sore throat, chills, fever, burning, itching on urination, vaginal discharge, mouth sores, or worsening of your condition.

Inform your doctor or nurse if you are or intend to be pregnant. Do not breast-feed.

Form to Decline Antibiotic Preventive Treatment

I have been informed that I have been exposed to a life-threatening germ or germs, or an active case of a communicable disease as the result of a bioterrorism event. Having been provided information about being protected from the germ or communicable disease, and the opportunity to discuss antibiotic treatments with a public health nurse or physician, I elect not to receive the antibiotic treatments. The reason I am electing not to receive the antibiotic treatment is

_____.

I understand that if I request antibiotic treatment, and I am medically eligible to receive it, it will be provided without cost to me. I have read thoroughly the attached materials about the antibiotic(s) and I understand the contents of these materials. I am satisfied and have no further questions.

By signing below, I am confirming either: (a) my desire not to receive, or (b) my understanding that based on my medical condition, I am not eligible to receive the antibiotic(s). By signing below, I am also acknowledging that I understand that because I have elected not to receive the antibiotic(s) or I have a medical condition that makes me ineligible for antibiotics, I am at higher risk of contracting the communicable disease if I am exposed to it. Accordingly, I hereby release The State of Hawaii Department of Health, its officers, employees, and agents, including any physicians or other health care providers, from any liability related to any subsequent exposure I have to the germ causing the communicable disease.

I acknowledge that I am signing this Form to Decline Antibiotic Preventive Treatment voluntarily and with full knowledge of its contents and meaning. I understand that if I change my mind at any time and decide to receive antibiotic treatment, and I am medically eligible to receive it, it will be provided at no cost to me.

Signature:_____ I.D.#:_____

Printed Name:_____

Witness to
Signature:_____ Date:_____

Form to Decline Immunization

I have been informed that I have either been exposed to a germ(s), or an active case of a communicable disease as the result of a bioterrorism event. Having been provided information about being immunized against the communicable disease and the opportunity to discuss immunization with a public health nurse or physician, I elect not to receive immunization at this time. The reason I am electing not to receive immunization is _____.

I understand that if I request immunization, and I am medically eligible to receive it, it will be provided without cost to me. I have read thoroughly the attached materials about the vaccine and I understand the contents of these materials. I am satisfied and have no further questions.

By signing below, I am confirming either: (a) my desire not to receive immunization, or (b) my understanding that based on my medical condition, I am not eligible to receive immunization. By signing below, I am also acknowledging that I understand that because I have elected not to receive immunization or I have a medical condition that makes me ineligible for immunization, I am at higher risk of contracting the communicable disease if I am exposed to it. Accordingly, I hereby release The State of Hawaii Department of Health, its officers, employees, and agents, including any physicians or other health care providers, from any liability related to any subsequent exposure I have to the germ(s).

I acknowledge that I am signing this Form to Decline Immunization voluntarily and with full knowledge of its contents and meaning. I understand that if I change my mind at any time and decide to receive immunization and I am medically eligible to receive it, it will be provided at no cost to me.

Signature:_____ I.D.#:_____

Printed Name:_____

Witness to
Signature:_____Date:_____

BIOLOGICAL OUTBREAK/EXPOSURE

MASS PROPHYLAXIS & IMMUNIZATION RECORD

REGISTRATION FORM

OFFICE USE ONLY	
Event or Exposure:	**Date:**
Clinic Site:	**ID #:**

Last Name:_____ First Name:_____ MI_____

Date of Birth:_____ Age:_____ Sex:_____ Ethnicity:_____

Occupation/School &grade:_____

Emergency Contact_____ Relationship;_____ Phone:_____

(For Children): Mother:_____ Father:_____ Guardian:_____

Residential Address:_____
Number Street Apt #

_____
City State Zip Code

Mailing Address:_____
Number Street Apt #

_____
City State Zip Code

Home Phone:_____ Business Phone:_____

Cell Phone:_____ Pager: _____ E-mail:_____

Personal Physician:_____ Phone:_____

This information will remain confidential and will only be used by Public Health Officials to assist in contacting you with follow-up information. Thank you for your cooperation.

Client's or Guardian's Signature:_____ Date:_____

BIOLOGICAL OUTBREAK/EXPOSURE

MASS PROPHYLAXIS & IMMUNIZATION RECORD

MEDICAL HISTORY

OFFICE USE ONLY Date:_____

Name:_____ I.D. # _____

Sex: Male ? Female ? Age:_____ Weight:_____

Date, time, location and nature of the exposure? _____

Decontamination at the scene required? ? Yes ? No

Pregnant? ? Yes ? No

Allergies? ? Yes ? No

Current or Past Illness? ? Yes ? No

Current Medications? ? Yes ? No

Symptoms? ? Yes ? No

Referral to Triage? ? Yes ? No
Referral to Hospital? ? Yes ? No

Comments:_____

Practitioner's Signature:_____Date:_____

BIOLOGICAL OUTBREAK/EXPOSURE

MASS PROPHYLAXIS & IMMUNIZATION RECORD

OFFICE USE ONLY Date:_____

Name:_____ I.D. # _____

Sex: Male ? Female ? Age:_____ Weight:_____

ANTIBIOTIC PROPHYLAXIS RECORD

1. I have read and understand the patient information statements about the antibiotic(s) that I am about to receive.

2. I understand why I should receive this medication.

3. I understand the possible side effects of such treatment.

4. I have been given the opportunity to ask questions about the antibiotics prior to receiving the medication.

5. I agree to receive the antibiotics. YES ? NO ? (Declination Form is attached)

6. SIGNATURE:_____

ANTIBIOTIC PROPHYLAXIS RECORD

Antibiotic	**Dose**	**Duration**	**Weekly Quantity of Antibiotic Dispensed**								**Adverse Reaction**	**Completed Rx**
			1st	2nd	3rd	4th	5th	6th	7th	8th		
Practitioner's Signature:												

BIOLOGICAL OUTBREAK/EXPOSURE

MASS PROPHYLAXIS & IMMUNIZATION RECORD

OFFICE USE ONLY	Date:_____
Name:_____	I.D. # _____
Sex: Male ? Female ?	Age:_____ Weight:_____

ANTHRAX VACCINE IMMUNIZATION RECORD

1. I have been given an anthrax vaccine information brochure.
2. I have been given the opportunity to ask questions about anthrax vaccine prior to receiving the immunization.
3. I agree to receive the anthrax vaccine. YES ? NO ? (Declination Form is attached)
4. SIGNATURE_____

Date Given	Dose Number	Dosing Schedule	Dose (ml)	Site (left or right arm)	Manufacturer And Lot Number	Administered By: (Printed or stamped signature block)
	1	Day 0				
	2	14 days after dose 1				
	3	14 days after dose 2				
	Booster	5 months after dose 3				

BIOLOGICAL OUTBREAK/EXPOSURE

MASS PROPHYLAXIS & IMMUNIZATION RECORD

OFFICE USE ONLY	Date:_____
Name:_____	I.D. # _____
Sex: Male ? Female ? Age:_____	Weight:_____

SMALLPOX (VACCINIA) IMMUNIZATION RECORD

1. I have been given a smallpox (vaccinia) vaccine information brochure.
2. I have been given the opportunity to ask questions about the smallpox (vaccinia) vaccine prior to receiving the immunization.
3. I agree to receive the smallpox vaccine. YES ? NO ? (Declination Form is attached)
4. SIGNATURE_____

Date Given	Dose Number	Dosing Schedule	Dose (ml)	Site (left or right arm)	Manufacturer And Lot Number	Administered By: (Printed or stamped signature block)
		One Dose				

BIOLOGICAL OUTBREAK/EXPOSURE

MASS PROPHYLAXIS & IMMUNIZATION RECORD

OFFICE USE ONLY	Date:_____
Name:_____	I.D. # _____
Sex: Male ? Female ? Age:_____	Weight:_____

Client Disposition

Was the patient decontaminated at the site of exposure?	☐ Yes	☐ No
If yes, what is the status of patient's clothing & personal effects?	☐ Decontaminated	
	☐ Retained by Hazmat	
	☐ Releases to client	
If no, is the patient declining decontamination?	☐ Yes	☐ No
If no, is the patient declining prophylaxis, or treatment?	☐ Yes	☐ No
Antibiotic prophylaxis indicated: Vaccination indicated:	☐ Yes	☐ No
Client declined antibiotic(s):	☐ Yes	☐ No
Antibiotic received during the current event:	☐ Yes	☐ No
Client received appropriate vaccination:	☐ Yes	☐ No
Client declined appropriate vaccination:	☐ Yes	☐ No
Adverse Reactions to prophylaxis or immunization:	☐ Yes	☐ No

Describe:_____

Disease developed despite immunization and antibiotic prophylaxis:	☐ Yes	☐ No
Client referred to medical center/field hospital for treatment:	☐ Yes	☐ No

Name and Location of Facility:_____

Client has been provided with pertinent medical information:	☐ Yes	☐ No
Client died:	☐ Yes	☐ No

Practitioner's Signature:_____ Date:_____

State of Hawaii
Department of Health
Biological Outbreak/Exposure Incident
Summary Data (All Sites)

Day of_____

CATEGORY NUMBER

Total number of persons served _____

Persons exposed _____

Concerned persons presenting for treatment (not exposed) _____

Persons dead _____

Persons treated for disease _____

Symptomatic persons recovered _____

Persons starting antibiotics _____

Persons completing antibiotics _____

Persons receiving vaccination _____

Persons completing vaccination schedule _____

Adverse reactions to antibiotics _____

Adverse reactions to vaccination _____

Persons developing illness despite prophylaxis _____

State of Hawaii
Department of Health

Biological Outbreak/Exposure Incident
Daily Summary (Individual NAC Site)

Day of_____

CATEGORY	**NUMBER**
Total number of people served	_____
Referred to triage center	_____
Referred to hospital	_____
People presenting with symptoms	_____
People started on antibiotics	_____
People completing antibiotic prophylaxis	_____
People receiving vaccination	_____
People completing the vaccination schedule	_____
People developing symptoms after prophylaxis	_____
People having adverse reactions to antibiotics or vaccination	_____

Signature of NAC site supervisor_____

REFERRAL TO EMERGENCY FACILITY

DATE: __/__/__ LOCATION OF INCIDENT:

NAME: _____ BIRTHDATE: __/__/

IMMUNIZATIONS ADMINISTERED: _____

_____

REACTION(S

- ☐ Mild itching & hives
- ☐ Wheezing
- ☐ Difficulty breathing
- ☐ Swelling of Mouth & Throat
- ☐ Hypotension: BP: _____ Pulse: _____ Respiration:
- ☐ Other:

ACTIONS:

1. Administration of epinephrine 1:1,000 subcutaneously
   _____ml at ____:____a.m./p.m. (Time), _____(Site).

   Repeated at ____:____a.m./p.m. (Time), _____ml _____(Site).

2. EMERGENCY PERSONNEL CONTACTED: TIME: ____:____a.m./p.m.

3. If Benadryl is administered:

   Diphenhydramine (Benadryl) _____mg _____cc, Intramuscular given at ____:____a.m./p.m. (Time), _____(Site).

4. Referral (Name of Facility):

5. Time departed for Emergency Facility: ____:____a.m./p.m.

MICT (signature)_____Date:_____

DAVID Y. IGE

GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D.

DIRECTOR OF HEALTH

In reply, please refer to:
File:

EMSIPSB 20-20

STATE OF HAWAII
DEPARTMENT OF HEALTH
EMERGENCY MEDICAL SERVICES & INJURY PREVENTION SYSTEM BRANCH
LEAHI HOSPITAL
3675 KILAUEA AVENUE, TROTTER BUILDING
HONOLULU, HAWAII 96816-2333
Phone: (808) 733-9210
Fax (Administration): (808) 733-9216
Fax (Billing/Medical Records): (808) 733-8332

January 28, 2020

TO: Hawaii Emergency Medical Services Stakeholder
FROM: Alvin C. Bronstein MD, FACEP
RE: Oahu Transportation Guideline Updates

What's New

1. Acute Stroke Transport – now incorporates large vessel occlusion bypass
2. Trauma – Tripler/pediatrics – Tripler accepts pediatric trauma patients
3. Burn (added section) – Straub can treat patients ≥ 15 years
4. Termination of Resuscitation now aligns with standing orders
5. Decompression Illness – Lists signs and symptoms of decompression injury

Mahalo.

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
EMERGENCY MEDICAL SERVICES & INJURY PREVENTION SYSTE M
Leahi Hospital – Trotter Basement
3675 KILAUEA AVENUE
HONOLULU, HAWAII 96816

PHONE: (808) 733-9210
Fax: (808) 733-8332

In reply, please refer to:
File: 17-74A1

OAHU AMBULANCE TRANSPORTATION GUIDELINES

Effective Date: [INSERT DATE]

Approved By:

Alvin C. Bronstein, MD, FACEP
EMSIPS Branch Chief

Rick Bruno, MD

OAHU AMBULANCE TRANSPORTATION GUIDELINES

Purpose: These guidelines seek to balance patient needs and preferences with the availability of Oahu ambulance units.

General Transportation Guidelines – Pediatric and Adult

EMS Personnel should transport patients to the nearest emergency facility with the resources that meet provider safety, patient safety, and medical needs.

A. Patients should be transported to the nearest appropriate facility meeting the Condition Specific Guidelines.

B. Metropolitan area units may consider the Honolulu Metro receiving facilities to be equivalent in distance, and the patient may have their choice of these facilities [see Appendix A].

C. All 911 receiving facilities are base stations EXCEPT Waianae Coast Comprehensive Health Center [see Appendix A].

D. During an emergency incident, EMS has on-scene command for patient medical needs.

Communication Guidelines

A. Hospital Communication (Nurse Advisory): A hospital communication is required every time a standing order is used.

B. Physician Communication: A physician communication on a **recorded line** is required for online medical direction. Online medical direction is required for all patients with hemodynamic instability, cardiac arrest, compromised airway, or any condition not covered under standing orders.

C. Special Considerations:

1. Pediatrics: Dual communication with an Oahu base station and Kapiolani Medical Center is *not* required to transport pediatric patients to a base station facility.
2. Trauma: Communication *is* required for all injured patients meeting any trauma category [see Appendix C: Trauma Triage Categories].
3. Special Accommodations: Hospital communication with the receiving facility is required for patients needing special accommodations [see Table 1: Special Accommodations].

D. Waianae Coast Comprehensive Health Center (WCCHC): WCCHC is not a base station. All communication with WCCHC should include dual

communication with the nearest available base station following parts A. and B. of this section. After case presentation to the base station physician, the WCCHC ED will communicate questions or concerns, and WCCHC ED has the right to re-route patients to a base station receiving facility.

E. EMS may communicate with the base station at any time.

TABLE 1: SPECIAL ACCOMMODATIONS
Bariatrics Continuous positive airway pressure (CPAP) C-spine immobilization Decontamination Imminent Delivery Infection control issue Hemodynamic instability Hyperbaric Security Special equipment Special needs - Other Supine positioning needed Ventilation – Mechanical

Condition Specific Guidelines

F. Burn

Patients 15 years and older transport to Straub Medical Center. Patients 14 years and younger transport to Kapiʻolani Medical Center.

Burn injuries that should be referred to a burn center include:

1. Partial thickness burns greater than 10% total body surface area (TBSA).
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
3. Third degree burns in any age group.
4. Electrical burns, including lightning injury.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
8. Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn

unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.

9. Burned children in hospitals without qualified personnel or equipment for the care of children.
10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention.

Obstetric (OB) Guidelines

	TABLE 2: OBSTETRIC GUIDELINES		
	GESTATION	**DESTINATION**	**NOTES**
NON-IMMINENT	0-19 weeks	Nearest appropriate ED	Follow General Guidelines
	For signs/symptoms of: Abdominal pain, labor, or vaginal bleeding		
	20-34 weeks	Transport to a facility with NICU capabilities: Kaiser Kapiolani Tripler	NICU
	≥35 weeks	Transport to a facility with OB capabilities: Castle Kaiser Kapiolani Punchbowl Tripler	OB

IMMINENT	Imminent Delivery	**Metropolitan and East Oahu** Castle Kaiser Kapiolani Punchbowl Tripler **West, Central, Northshore Oahu** Communicate with nearest base station for imminent delivery preparation and transport	OB
TRAUMA	Pregnant Trauma Patient	Use trauma triage and transport guidelines	Trauma

KAISER: Kaiser Moanalua, Punchbowl: QMC
OB: Obstetric services

NICU: Neonatal intensive care unit

Psychiatric/Behavioral Health Guidelines

- First priority is patient and provider safety.
- EMS is responsible for the patient's care.
- Behavioral Health patients should be transported per the General Guidelines and may be taken to any facility with the following stipulations:

MH-1 patients:

- Transport by EMS must be to a hospital designated by the Department of Health (DOH) to receive MH-1 patients [see Table 3].
- After receiving authorization from the DOH designated Mental Health Emergency Worker (MHEW), EMS must be accompanied by police as described below.
- There is no reroute for MH-1 patients.
- If the patient has non-psychiatric and psychiatric medical needs, the patient must be transported to the hospital designated for the MH-1 patient. If transporting to the designated hospital the Paramedic determines that any additional time it would take to transport the patient to the designated hospital poses a serious risk of death or harm to the patient, the Paramedic may reroute the patient to the closest hospital. If this occurs, the police will leave once they reach the

hospital and the patient must be treated as a voluntary admission.

Oral Ex Parte Patients (MH-2):

- If transported by EMS, are under judicial order for transportation to a specific hospital and may not be re-routed regardless of hospital status.

Psychiatric Emergency Transfers (MH-4):

- An MH-4 form must be completed by the sending facility and accompany the patient.
- A transfer form must be completed by the sending facility with an accepting physician identified.
- MH-4 patients cannot refuse ambulance transport since they have been deemed to lack decisional capacity.

- Police may assist EMS with violent patients. However, police can only assist in preventing violence, as in any other call regarding a violent person. Police cannot assist in getting a violent patient into an ambulance, nor can they follow the ambulance or ride in the ambulance unless the patient is under an MH-1 or MH-2. Options for transportation under a MH-1 or MH-2 include:

- Law Enforcement transports, EMS must follow the vehicle.
- A Law Enforcement vehicle follows the transporting ambulance.
- A Law Enforcement officer does not normally ride in the rear compartment of the ambulance with the patient. However, HPD will make exceptions on a case by case basis. The on-scene officer must get permission to ride in the back from a sergeant or higher level commander.

TABLE 3: PSYCHIATRIC/BEHAVIORAL HEALTH GUIDELINES		
HOLD	**DESTINATION**	**NOTES**
MH-1	Castle Medical Center The Queen's Medical Center – Punchbowl Tripler Army Medical Center	ED and inpatient psych capabilities
MH-2	Facility listed on MH-2	
MH-4	Facility listed on transfer form with accepting physician name	

Prisoner/Law Enforcement Custody

- Patients should be managed using the Transportation Guidelines.
- Patients may refuse transport provided they meet all refusal guidelines. Law Enforcement officers may not refuse transport on behalf of a patient.
- If the patient agrees to be transported and requires a law enforcement escort, one of the following is required:
  - EMS transports: law enforcement vehicle follows the transporting ambulance.
  - Law Enforcement transports: EMS follows the vehicle.
  - A Law Enforcement officer cannot normally ride in the rear compartment of the ambulance with the patient. However, HPD will make exceptions on a case by case basis. The officer on-scene must get permission to ride in the back from a sergeant or higher level commander.

Decompression Illness - Diving Injury

- Patients with suspected decompression sickness in cardiopulmonary arrest should be transported to the nearest emergency facility.
- Patients suspected of decompression illness, air embolism or other injury requiring recompression treatment should be transported directly to a hyperbaric facility [see Appendix A]. These patients include:
  - History of diving with compressed gas within the last 36 hours
  - Normal vital signs
  - No major traumatic injury mechanisms or signs
  - Negative LAPSS (low suspicion for primary vascular stroke
  - One or more of the following is the most prominent symptom:
    - ❖ Joint pain: not increased by movement, non-tender
    - ❖ Skin marbling; patchy blue and pink areas, started as itching/redness
    - ❖ Extremity weakness, numbness or paresthesia

If all five criteria above are met, consider transport to Kuakini Medical Center. Communicate with the base station physician (BSP) at Kuakini ER.

Notes:

More serious forms of decompression sickness (DCS) or acute gas embolus (AGE) may exist, but these patients should preferentially be transferred to the nearest emergency department.

Less serious forms of DCS, such as isolated itching or rash, may resolve with oxygen alone and/or may not warrant transportation to Kuakini.

G. STEMI

- Patients suspected of having an acute ST segment elevation MI (STEMI) as indicated by a prehospital EKG, will be transported to the nearest Percutaneous Transluminal Coronary Angioplasty (PCTA) facility [see Appendix A].
- Physician communication to receiving facility is required. Transmit EKG, if capabilities available.

Acute Stroke

- Los Angeles Pre-hospital Stroke Scale (LAPSS) is required for all patients suspected of acute stroke [see Appendix D].
- For patients with a positive LAPSS, C-STAT should be performed [see Appendix E].
- If C-STAT is positive, transport directly to a Thrombectomy-Capable Stroke Center regardless of hospital re-route status (Queen's PB)
- If LAPSS is positive and C-STAT is negative, transport to a Stroke Ready Hospital [see Appendix A].
- Hospital communication is required on all suspected stroke patients with report of LAPSS and CSTAT status and last known well time.

Trauma – Field Triage of the Injured Patient

- Triage of the Trauma patient will follow the Categories 1 to 4 as outlined in Appendix C.
- **Category 1 and 2 trauma patients:** Transport to The Queen's Medical Center Punchbowl. (Level I Trauma Center). Department of Defense beneficiaries to Tripler Army Medical Center (Level II Trauma Center)
- **Adult Category 3 trauma patients:** Transport to either Pali Momi Medical Center (Level III Trauma Center), The Queen's Medical Center Punchbowl (Level I Trauma Center), or Tripler Army Medical Center (Level II Trauma Center for Department of Defense beneficiaries only).
- **Adult Category 4 trauma patients:** Transport to any 911 receiving facility.

Pediatric Category 1 and pediatric head injuries: Transport to Queen's Medical Center Punchbowl.

- **Pediatric Category 2, 3 and 4 trauma patients:** Transport to Kapiolani Medical Center for Women's and Children (Level III Pediatric Trauma Center).
- Trauma patients in cardiac arrest:
  - ❖ Trauma patients in asystole on scene may pronounced on scene.

- Trauma patients in Pulseless Electrical Activity (PEA) or other non-perfusing rhythms should be transported to the nearest facility. From the Honolulu Metropolitan (Metro) area, The Queen's Medical Center -Punchbowl is the preferred receiving facility.

TABLE 4: TRAUMA FIELD TRIAGE GUIDELINES	
CATEGORY	**DESTINATION**
1 *(**including** all pediatric head injuries)*	The Queen's Medical Center – Punchbowl Tripler Army Medical Center (Department of Defense beneficiaries only)
2	The Queen's Medical Center – Punchbowl Tripler Army Medical Center (Department of Defense beneficiaries only)
3	Pali Momi Medical Center
2, 3 and 4 *14 years old and younger* *(**excluding** pediatric head injuries)*	Kapiolani Medical Center for Women and Children Tripler Army Medical Center (Department of Defense beneficiaries only)
4	Nearest appropriate ED
Unstable for transport, impending respiratory failure, or cardiac arrest	Nearest appropriate ED

Termination of Resuscitation

Cardiac Arrest

1. Consider field pronouncement if cardiac arrest patient:
   - received ALS resuscitation for ≥ 20 minutes and
   - is in asystole and
   - no Return of Spontaneous Circulation (ROSC)
2. Consider transporting patients when:
   - there are concerns for scene/provider safety or
   - the scene is in a very public place

Traumatic Cardiac Arrest

1. Strongly consider field pronouncement if traumatic cardiac arrest patient:
   - is in asystole after significant blunt trauma or penetrating trauma
2. Consider transporting patients when:
   - there are concerns for scene/provider safety or
   - the scene is in a very public place

Transportation of Multiple Patients from the Same Scene:

More than one patient may be transported from the same scene in a single ambulance if EMS providers believe they can adequately manage the medical and safety needs of each patient. If not, call for back-up and initiate multiple casualty procedures as appropriate.

If multiple patients in ambulance, triage patients according to the one with higher level of illness or injury.

Emergent Inter-Facility Transfers:

911 ambulances may provide an emergency transfer from one facility to another.

- Inter-facility transports through the 911 system are to be utilized only in cases that have a time sensitive component and not for the convenience of the sending or receiving facility.

- Patient care provided by EMS personnel during transfers shall follow the State of Hawaii MICT Standing Orders. Communication with hospitals shall be in accordance with Communication Guidelines.

- Only an on-duty emergency physician (whether or not they are the transferring physician) may make an inter-facility transport request.

- The destination facility will be determined by the requesting physician who will identify the accepting physician.

- Waianae Coast Comprehensive Health Center (WCCHC) is treated as an outpatient clinic and EMS will respond as a scene call with transport following these transport guidelines.
  a. WCCHC does not have an EMTALA obligation and is not required to secure an accepting facility before request for transfer. WCCHC will attempt to secure an accepting facility as time and facility resources allow.

  b. Patients transported from WCCHC who have a prearranged accepting physician will be transported to that facility.

  c. If EMS assessment indicates the patient would be better served at an alternate facility, then EMS must communicate with the accepting facility's physicians to request diversion to an alternate facility.

- Patients typically will be transported from and to emergency departments. There may be situations when it is in the best interest of the patient to transport from or to locations within a hospital (e.g., Cath Lab, Radiology Department/CT Scan, Labor and Delivery unit, etc.). EMS personnel must be accompanied by appropriately trained hospital personnel to the desired patient location or destination.

- The sending facility must provide nursing staff to assist in patient care that is beyond EMS scope of practice. This includes management of intravenous medications not covered in State of Hawaii MICT Standing Orders. Blood transfusions are an exception.

Transport to Waianae Coast Comprehensive Health Center

The WCCHC is a Federally Qualified Health Center (FQHC) operating a 24/7 Emergency Department.

The WCCHC ED **does not** provide the following:

- Inpatient or Observation Units.
- CT, MRI or Advanced Imaging.
- Medical or Surgical Specialist Consultation.
- Psychiatry Consultation.
- Blood or Blood-products for Transfusion.
- Aeromedical transport infrastructure.

Only patients triaged as MINOR may be transported to WCCHC. Patients triaged as SERIOUS or MAJOR requires dual communication with WCCHC and base station for destination decision [see Conditions Definitions Appendix A]

Re-route Guidelines:

When a hospital determines that it has insufficient beds or staff in the emergency department to provide appropriate care, they will declare themselves on re-route (closed) for emergency ambulance arrivals.

- Hospitals declaring re-route will so indicate on WebEOC.

- Re-route exceptions are:
  a. The Queen's Medical Center–Punchbowl does not re-route for trauma patients.
  b. Kapiolani Medical Center for Women's and Children does not re-route for pediatric patients .

- Patients experiencing hemodynamic instability, cardiac arrest or compromised airway may continue to be transported to facilities on re-route.

- Hospitals will not re-route ambulances that have already communicated with the facility prior to closure.

- If all Honolulu Metropolitan, West Oahu, or Windward (excluding Kahuku) Facilities are on re-route, EMS dispatch will coordinate a rotation schedule to distribute patients [see Appendix A].

- If medically indicated and system status permits, patients are to be transported to their facility of choice. (e.g., Kaiser members to Kaiser or active military and dependents to Tripler).

- Ambulances en-route to hospitals prior to re-route declaration may not be diverted.

APPENDIX A

FACILITY RESOURCE CAPABILITIES

All 911 receiving facilities are base stations except Waianae Coast Comprehensive Health Center.	
Receiving Facilities	
Honolulu Metropolitan (Metro)	Kaiser Moanalua Medical Center Kapiolani Medical Center for Women and Children Kuakini Medical Center The Queen's Medical Center – Punchbowl Straub Medical Center Tripler Army Medical Center
West Oahu	Pali Momi Medical Center The Queens Medical Center – West Oahu Wahiawa General Hospital Waianae Coast Comprehensive Health Center
Windward	Castle Medical Center Kahuku Medical Center
Metro-West Border	Kaiser Moanalua Medical Center Tripler Army Medical Center

EKG Transmission Capabilities	
	Castle Medical Center Kaiser Moanalua Medical Center Kuakini Medical Center Pali Momi Medical Center Straub Medical Center The Queen’s Medical Center – Punchbowl Tripler Army Medical Center
Hyperbaric Capabilities	
	Kuakini Medical Center Tripler Army Medical Center
Licensed Psychiatric Facilities with Emergency Departments	
	Castle Medical Center The Queen’s Medical Center – Punchbowl Tripler Army Medical Center
Obstetric Capabilities	
	Castle Medical Center Kaiser Moanalua Medical Center Kapiolani Medical Center for Women and Children The Queen’s Medical Center – Punchbowl Tripler Army Medical Center

Pediatric Intensive Care Unit	
	Kaiser Moanalua Medical Center Kapiolani Medical Center for Women and Children Tripler Army Medical Center
STEMI Capabilities	
	Castle Medical Center Kaiser Moanalua Medical Center Kuakini Medical Center Pali Momi Medical Center Straub Medical Center The Queen’s Medical Center-Punchbowl Tripler Army Medical Center
Stroke Ready Capabilities	
	Castle Medical Center Kaiser Moanalua Medical Center Kuakini Medical Center Pali Momi Medical Center Straub Medical Center The Queen’s Medical Center – Punchbowl The Queen’s Medical Center – West Oahu Tripler Army Medical Center Wahiawa General Hospital

Thrombectomy-Capable Stroke Center	
	The Queen’s Medical Center – Punchbowl
Trauma Centers	
Level I	The Queen’s Medical Center – Punchbowl
Level II	Tripler Army Medical Center (*Department of Defense beneficiaries only*)
Level III	Pali Momi Medical Center
Level III Pediatric	Kapiolani Medical Center for Women and Children

APPENDIX B
DEFINITIONS OF ACUITY

TABLE 6: DEFINITIONS OF ACUITY		
PRIORITY	**LABEL**	**DEFINITION**
Priority 1	Critical/ Extremely Critical	• Unstable or deteriorating level of consciousness and/or vital signs; • Unstable or deteriorating primary (and/or secondary) problem requiring definitive Pre-hospital treatment and transport. • Pre-hospital treatment will not stabilize patient's condition.
Priority 2	Serious	• May or may not have altered level of consciousness; • All vital signs stable; • Primary and/or secondary problems demands initiation of definitive pre-hospital treatment; • Pre-hospital treatment will stabilize patient's condition.

Priority 3	Minor	• No alteration in level of consciousness; • All vital signs stable, • No impending deterioration.

(Reference: 1997: Managed Care Transport Guidelines definition, referencing Ambulance Report Form Instruction Manual, HEMS)

APPENDIX C
TRAUMA TRIAGE CATEGORIES

Trauma Triage Category	Patients meeting any of the following physiologic criteria should be transported to the appropriate receiving facility	Destination Category
1	GCS:<14 Systolic Blood Pressure: <90mmHg or mechanism of injury Respiratory Rate: Adult <10 or >29	Trauma Center I or II
2	Penetrating injuries to head, neck, torso, or extremities proximal to elbow and knee Flail chest Two or more long bone fractures Crushed, degloved or mangled extremities Amputation proximal to wrist or ankle Pelvic fractures Open or depressed skull fractures	Trauma Center I or II

	Paralysis	
3	Falls Adult: >20 feet (one story = 10 feet) Children: >10 feet or two to three times the child's height High-auto Intrusion >12 inches occupant side, >18 inches any site Ejection (partial or complete) from auto Death in same passenger compartment Vehicle damage consistent with high risk injury Auto vs. pedestrian/bicyclist thrown, run over, or with significant impact (>20mph)	Trauma Center I, II or III

4	Age Older Adult (>55 years) Children Anticoagulant Burns (see Burn Special Considerations) EMS Judgment End Stage Renal Disease Pregnancy >20 weeks Special Circumstances Time sensitive extremity injury Open fracture Fractures with neurovascular compromise	Nearest appropriate ED

APPENDIX D

LOS ANGELES PREHOSPITAL STROKE SCALE

Stroke Screening Criteria	Yes	No
1. Age over 45 years		
2. No prior history of seizure disorder		
3. New onset of neurologic symptoms in last 24 hours		
4. Patient was ambulatory at baseline (prior to event)		
5. Blood glucose between 60 and 400		

Exam: *look for obvious asymmetry*

	Normal	Right	Left
Facial smile/grimace		Droop	Droop
Grip		Weak Grip No Grip	Weak Grip No Grip
Arm weakness		Drifts Down Falls Rapidly	Drifts Down Falls Rapidly

6. Based on exam, patient has only unilateral weakness: Y/N		
7. If yes (or unknown) to all items above, LAPSS screening criteria met.		

If LAPSS criteria for stroke met, call receiving hospital with "CODE STROKE", if not then return to the appropriate treatment protocol. (Note: the patient may still be experiencing a stroke if even if LAPSS criteria are not met.)

Provided by the Internet Stroke Center —

www.strokecenter.org

Reference

Kidwell CS, Starkman S, Eckstein M, Weems K, Saver JL. "Identifying stroke in the field. Prospective validation of the Los Angeles prehospital stroke screen (LAPSS)." Stroke 2000 Jan;31(1):71-6

APPENDIX E

C-STAT Assessment

ITEM	POINTS
Gaze Deviation - Conjugate gaze deviation	2
Consciousness/Commands (Aphasia) - Incorrectly answers one LOC question (age or month) and one command question (close your eyes, or open and close hand)	1
Arm Drift (Hemiplegia) - Unable to hold arm (right, left or both) up for 10 seconds before it falls to bed	1
	0-4
Score of **2** or more = Considered a + C-STAT with high likelihood of Large Vessel Occlusion (LVO) stroke	

APPENDIX F
ABBREVIATIONS AND DEFINITIONS

AED	Automated External defibrillator
BASE STATION	A receiving hospital that provides online medical control
CPAP	Continuous Positive Airway Pressure
CPR	Cardiopulmonary Resuscitation
ED	Emergency Department
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EMTALA	Emergency Medical Treatment and Labor Act
FACEP	Fellow of the American College of Emergency Physicians
FQHC	Federally Qualified Health Center
GCS	Glasgow Coma Scale
HEMS	Honolulu EMS
HPD	Honolulu Police Department
ICU	Intensive Care Unit
LAPSS	Los Angeles Pre-hospital Stroke Scale
MD	Medical Doctor
MH-1	Form: Filled out by police if they see a person who needs help and bring him/her to a hospital for emergency examination.

MH-2	Form: Oral ex parte order for Mental Health Examination. A licensed physician, psychologist, attorney, member of the clergy, health or social service professional or any state or county employee in the course of their employment may apply to the court for an ex parte' (one-sided) order directing that a police officer or other suitable individual take a person into custody and deliver them to a designated facility designated by the director for emergency examination and treatment.
MH-4	Form: Completed by physician after a patient is brought to the hospital (usually transported to an ED under a MH-1 or MH-2); requires a 48-hour emergency commitment.
MHEW	Mental Health Emergency Worker
MI	Myocardial Infarction
MICT	Mobile Intensive Care Technician (Paramedic)
NICU	Neonatal Intensive Care Unit
OB	Obstetric
PCTA	Percutaneous Transluminal Coronary Angioplasty
PEA	Pulseless Electrical Activity
ROSC	Return of Spontaneous Circulation

STEMI	ST Segment Elevation MI
WCCHC	Waianae Coast Comprehensive Health Center
WEB EOC	Web-based Emergency Operations Center

EMS personnel: Wear appropriate PPE: mask, gloves, eye protection to all medical calls

1. Check pulse ox on most patients. Silent hypoxemia is being noted in patients, even prior to them complaining of shortness of breath.

2. Avoid aerosol generating procedures
    a. Intubation
    b. Supraglottic Airway Placement
    c. Nebulizer treatment
    d. CPAP
    e. BiPAP
    f. High flow O_2 (> 6L/m)
3. If aerosol generating procedure must be performed prehospital
    a. Avoid confined space such as back of ambulance
        i. If necessary, keep rear doors opened while parked
        ii. Keep window between cab and patient area closed
    b. If feasible, consider doing the procedure prior to loading patient
4. Consider **Treatment Without Transport** if patient does not require further treatment or ED evaluation
5. Contact MEDICOM Base Station Physician control for authorization
    a. See **Treatment Without Transport** Guideline

Oxygen Administration:

Oxygen administration is based on the patient's clinical presentation:

1. Provider should wear an N95 mask
2. Administration of nasal cannula O_2 (2-4 L/m): Place simple (surgical) mask over patient's
   nose and mouth.

3. Avoid the use of high flow oxygen if O_2 saturation is greater than 90%

Nebulizers:

1. Avoid the use of Nebulizers if possible.
2. Alternatives to Nebulizer Treatment:
    a. MDI Inhaler with Spacer Chamber
        i. Use patient's own MDI inhaler and spacer chamber
        ii. Administer 2 puffs into the chamber; instruct patient to inhale ***slowly.***
        iii. Repeat several times if needed
    b. Alternatives to inhalers (see Hawaii State Standing Orders)
        i. Epinephrine IM
        ii. Magnesium Infusion

EMS District Health Medical Director Rick Bruno MD Terrence Jones MD Miroslaw Szatko MD James Scamahorn MD ***Version2.14.20***	**COUNTY** City and County of Honolulu Hawaii County Maui County Kauai County	**APPROVED:**  **Alvin C. Bronstein MD, FACEP** **EMSIPSB Chief** **14 April 2020**