Draft Minutes of Meeting – Subject to Change Upon Approval by the Drug/Device/Protocol Committee at their next regularly scheduled meeting

MINUTES

EMERGENCY MEDICAL SERVICES & TRAUMA SYSTEM

DIVISION OF COMMUNITY HEALTH

DRUG/DEVICE/PROTOCOL (DDP) COMMITTEE

November 1, 2023 – 9:00 A.M.

MEMBERS PRESENT

Michael Holtz, MD, CCFD, Chair
Jessica Leduc, DO, HFD
Chief Frank Simone, NLVFD
Derek Cox, LVFR
Nate Jenson, DO, MFR
Michael Whitehead, AMR (Alt)
Todd Ford, HFD (Alt)
Walter West, BCFD (Alt)
Kelly Morgan, MD
Mike Barnum, MD, AMR
Chief Shawn Tobler, MFR
Shannon Ruiz, PharmD
Mark Calabrese, CA
John Osborn, CA
Jim McAllister, LVMS

MEMBERS ABSENT

Troy Biro, Guardian Flight
Devon Eisma, RN, OptimuMedicine
Samuel Scheller, GEMS
Chief Jennifer Wyatt, CCFD
Alicia Farrow, Mercy Air
Jeff Davidson, MD, MWA
Chief Stephen Neel, MVFD

SNHD STAFF PRESENT

Christian Young, MD, EMSTS Med. Director
Laura Palmer, EMSTS Supervisor
Roni Mauro, EMSTS Field Representative
Stacy Johnson, EMSTS Regional Trauma Coordinator
John Hammond, EMSTS Manager
Edward Wynder, Associate General Counsel
Rae Pettie, Recording Secretary

PUBLIC ATTENDANCE

Sandra Horning, MD
Ashley Tolar
Dan Shinn
Rebecca Carmody
Matthew Dryden
Steven DePue
Stephanie Teague
Bryce Wilcox
Paul Stepaniuk
Nathan Root
Dawn C.

CALL TO ORDER - NOTICE OF POSTING OF AGENDA

Chairman Michael Holtz called the meeting to order at 9:05 a.m. and stated the Affidavit of Posting was posted in accordance with the Nevada Open Meeting Law. All Committee members joined the meeting by teleconference and the roll call was administered by Laura Palmer who noted that a quorum was present.

I. FIRST PUBLIC COMMENT

Members of the public are allowed to speak on Action items after the Committee's discussion and prior to their vote. Each speaker will be given five (5) minutes to address the Committee on the pending topic. No person may yield his or her time to another person. In those situations where large groups of people desire to address the Committee on the same matter, the Chair may request that those groups select only one or two speakers from the group to address the Committee on behalf of the group. Once the action item is closed, no additional public comment will be accepted. Dr. Holtz asked if anyone wished to address the Board pertaining to items listed on the agenda. Seeing no one, he closed the Public Comment portion of the meeting.

II. CONSENT AGENDA

Dr. Holtz stated the Consent Agenda consists of matters to be considered by the DDP that can be enacted by one motion. Any item may be discussed separately per Committee member request. Any exceptions to the Consent Agenda must be stated prior to approval.

Approve Minutes for the Drug/Device/Protocol Committee Meeting: October 4, 2023

A motion was made by Chief Simone, seconded by Dr. Morgan, and carried unanimously to approve the Consent Agenda as written.

III. REPORT/DISCUSSION/POSSIBLE ACTION

A. Discussion of the Use of Bi-Level CPAP Masks

Dr. Morgan reported the recommendation from the last meeting was to work on the verbiage for the protocol. The suggestion was to replace "CPAP" with non-invasive positive pressure ventilation (NIPPV) throughout the protocols where appropriate. She also proposed combining D. and E. on the pearls to read, "D. Gradually increase the flow rate, slowly reaching the desired CPAP pressure. Secure face mask onto patient face using head harness." Dr. Holtz suggested adding a new E. to read, "If using BiPAP, switch the device into BiPAP mode and select the appropriate BiPAP."

A motion was made by Dr. Morgan, seconded by Mr. Ford, and carried unanimously to approve the following revisions to the Continuous Positive Airway Pressure (CPAP) protocol:

1. *Change the title of the protocol to "Non-Invasive Positive Pressure Ventilation (NIPPV)" and throughout the protocol manual as appropriate.*
2. *Combine D. and E. to read, "Gradually increase the flow rate, slowly reaching the desired CPAP pressure. Secure face mask onto patient face using the head harness."*
3. *Add a new E. to read, "If using BiPAP, switch the device into BiPAP mode and select the appropriate BiPAP."*
4. *Revise H. to read, "If patient develops any of the contraindications or requires definitive airway control, discontinue NIPPV and provide necessary airway control."*

B. Discussion of the Addition of Tranexamic Acid to Protocol and Formulary - Tabled

C. Discussion of Sodium Bicarbonate Use in Hyperkalemia

Mr. Ford reported that Henderson FD is seeing up to three to four ampules of sodium bicarbonate given early in cardiac arrest due to suspected hyperkalemia. It's being given before calcium chloride, depending on the size of the patient. Looking at the protocol as compared to the national standard, the dose in the protocol is typically what is seen with tricyclic overdoses, not the dose you would see for typical hyperkalemia. He suggested changing the dose to a 50 ml equivalent, max it out, and then add education to the effect that calcium chloride is the priority in hyperkalemia, and sodium bicarbonate should not be given if the patient is not well ventilated. He noted the Mayo Clinic, European Resuscitation Council, and even ACLS now recommends that there really has been no proven benefit of sodium bicarbonate in the presence of hyperkalemia, and most agencies are moving away from using it. Dr. Holtz agreed that in cardiac arrest there's really no proven benefit in that arena, and in

some of the more recent studies there's a trend towards harm with sodium bicarbonate. He noted that the current 1 mEq/kg dosing is also a little awkward from a hospital standpoint.

Mr. Cox asked how much calcium chloride is traditionally given for significant cardiac arrest, EKG changes and hyperkalemia. He stated that in his previous experiences, and witnessing how much is given in other settings, one gram may be insufficient. Dr. Holtz responded that one gram is a typical dose because that's how it's packaged. In the hospital, the calcium chloride contains more calcium than the calcium gluconate version that many people will use in the E.D. setting. He stated he is comfortable that the current one-gram dose should give the effect needed for hyperkalemia and doesn't see a reason to change it at this time. Dr. Morgan agreed that calcium chloride is also pretty toxic to the veins when given peripherally. Dr. Young also agreed, but stated the pediatric protocol is a weight-based dosing with no max on calcium chloride, so we may need to revisit adding a max dose for peds.

Mr. Ford suggested they add a pearl that states if you give sodium bicarbonate with suspected hyperkalemia in the presence of a cardiac arrest setting, the patient must be either intubated with End Tidal CO^2,with confirmed airway established. Dr. Holtz noted we can add it to the pearls, but it's tricky just because as stated earlier, a lot of providers will just give sodium bicarbonate, generally in cardiac arrest, when the evidence doesn't really support that, as pointed out. Ideally, we should only be using calcium chloride in patients where we have a good suspicion for hyperkalemia and no adrenal failure. If you can see an AV fistula (irregular connection between an artery and a vein) or a dialysis catheter or something like that, otherwise even the calcium chloride is of questionable efficacy per the data. His suggestion would be to leave the protocol as is and cover that in education. He believes some of the issues with sodium bicarbonate in cardiac arrest is that the concern is that it can worsen acidosis through splitting the NCO^2 and splitting the acidosis. After some discussion it was agreed to remove the reference to the 8.4% solution in the Overdose/Poisoning protocol for TCA overdose and change the dose to a 50 ml equivalent to be consistent to read, "Sodium Bicarbonate 1 mEq/kg IV/IO." Dr. Young agreed the revision should also be made to the pediatric Overdose/Poisoning protocol as well. Ms. Palmer noted that revision will require a new agenda item for another meeting.

A motion was made by Mr. Cox, seconded by Chief Simone, and carried unanimously to change the Sodium Bicarbonate dose to a 50 mEq single dose in the the Hyperkalemia (Suspected) protocol and address the other related protocols at the next meeting.

D. Discussion of Atropine in Bradycardia - Tabled

E. Discussion of Changes in Adult Cardiac Arrest Pearls

Chief Simone noted the recommendation in the cardiac arrest pearls for the pit crew approach was added to the pediatric protocol, but not the adult protocol. He suggested they add the same verbiage for consistency. Dr. Holtz stated the change was approved at a previous meeting and should be included in the next protocol rollout in January 2024.

F. Discussion of Push Dose Pressors Across All Related Protocols

Mr. Ford stated that phenylephrine is the first pressor referenced in the bradycardia protocol. However, the literature shows phenylephrine should actually not be used in the presence of bradycardia. Phenylephrine was added two years ago in anticipation of a dopamine shortage. Mr. Ford stated the DDP minutes show that phenylephrine was to be used in place of dopamine. However, the Health District required both to be carried in inventory. That being the case, we should be using dopamine in the presence of bradycardia, not phenylephrine. He stated there appears to be confusion systemically as to what pressor would be preferred in that situation. For instance, if you go to the Sepsis (Suspected) protocol, the first pressor listed is push dose epinephrine or phenylephrine, and then it says to consider dopamine. Currently it gives you three options, and what they're seeing in the field is that providers are just picking the one they're more comfortable using. He asked for clarification as to the preferred pressor.

The committee recalled discussions related to the shortages and concern about removing dopamine for fear they may need it in the future in case push dose epinephrine was on shortage and they would have nothing if they were to remove phenylephrine. Dr. Holtz stated they try to list the drugs in order of preference as much as possible. The Sepsis (Suspected) protocol push dose epinephrine would ideally be the first line drug, or push dose phenylephrine, and then dopamine, which he has no heartache about removing altogether. Dr. Morgan asked

whether they can just re-order the medications, placing push dose epinephrine first, then follow it with push dose phenylephrine and dopamine. Ms. Palmer stated that push dose epinephrine is not currently listed in the bradycardia protocol. Dr. Holtz suggested replacing push dose phenylephrine with push dose epinephrine. Given at least the risk of reflex bradycardia, push dose phenylephrine should just be taken out of the bradycardia protocol and just replace it with push dose epinephrine in the standard dose.

After some discussion, the committee agreed to make future adjustments to the Sepsis (Suspected), Bradycardia, Allergic Reaction and Shock protocols, and remove dopamine as a consideration. The pediatric bradycardia protocol will be tabled until the next meeting.

A motion was made by Dr. Morgan, seconded by Mr. Ford, and carried unanimously to make the following revisions:

1. *Remove dopamine from the adult Allergic Reaction and pediatric Shock protocols;*
2. *Remove phenylephrine from the adult Bradycardia protocol;*
3. *Add push dose Epinephrine to the adult Bradycardia and pediatric Shock protocols;*
4. *Change the adult push dose epinephrine to 10 mcg IV/IO across all protocols;*
5. *Change the pediatric push dose epinephrine to 1 mcg/kg, max 50 mcg, titrate to SBP >70 mmHG + 2x age in the pediatric Shock protocol.*

IV. INFORMATIONAL ITEMS/ DISCUSSION ONLY

None.

V. SECOND PUBLIC COMMENT

Members of the public are allowed to speak on Action items after the Committee's discussion and prior to their vote. Each speaker will be given five (5) minutes to address the Committee on the pending topic. No person may yield his or her time to another person. In those situations where large groups of people desire to address the Committee on the same matter, the Chair may request that those groups select only one or two speakers from the group to address the Committee on behalf of the group. Once the action item is closed, no additional public comment will be accepted. Dr. Holtz asked if anyone wished to address the Board pertaining to items listed on the agenda. Seeing no one, he closed the Public Comment portion of the meeting.

VI. ADJOURNMENT

There being no further business to come before the Committee, the meeting was adjourned at 10:31 a.m.