



6/11/2019

Mr. Vince Long
Leon County Administrator
Leon County Courthouse
301 South Monroe Street
Tallahassee, FL 32301

RE: APPLICATION FOR RENEWAL OF CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

Dear Mr. Long:

Pursuant to Leon County, Florida Code of Ordinances, Chapter 8 Health and Human Services, Article III. – Emergency Medical Services Sect. 8.64 (a) (9). Tallahassee Memorial Healthcare hereby submits an application for renewal of Tallahassee Memorial Emergency Medical Services' (TMH EMS) Certificate of Public Convenience and Necessity (CPCN) for provision of emergency medical services.

Tallahassee Memorial HealthCare (TMH) desires to continue the ambulance transportation services that we now provide (High-risk Neonate, Infant and Pediatric Transport Team, Inter facility Transports, Transport of TMH Patients home and to other local or Regional Facilities, and Advanced Life Support Ambulance Service transport from the Tallahassee Memorial Emergency Center-Northeast to the main TMH Facility).

TMH seeks approval of Leon County to extend the Certificate of Public Convenience and Necessity for Tallahassee Memorial Hospital EMS Transport Services for an additional 4 years enabling TMH EMS Transport Resources to continue to service our community as we have for the past 40 years.

Included with the renewal, TMH EMS is also providing to the Emergency Medical Services Advisory Council of Leon County (EMSAC) in an electronic format.

If you have any questions concerning this application or require additional information, please contact Ryan Smith at (850) 431-5311, Ryan.Smith@tmh.org or Jon Antworth at (850) 321-2075, jon.antworth@tmh.org.

Sincerely

A handwritten signature in black ink, appearing to be "R. Smith", written over a horizontal line.

Ryan W. Smith, M.S.N., M.H.A., R.N.
Executive Director of Clinical Operations
Tallahassee Memorial HealthCare, Inc.
1300 Miccosukee Rd.
Tallahassee, FL 32308
850-431-2341
850-431-6054 FAX

Tallahassee Memorial Emergency Medical Services

Application for Renewal of Certificate of Public Convenience and Necessity



2019



Certificate of Public Convenience and Necessity Application

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23) The application fee except for renewals shall be in the amount of \$5,000.00, except for the state, agencies of the state, and political subdivisions of the state, who shall not be required to submit such application fee.	29

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A. Certificate of Public Convenience (expires: Dec.31, 2019)	
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1a) The name, age and address of the applicant and the length of time the applicant has resided in the county if the applicant is an individual; the business name of the partnership and the name, age and address of each partner and the length of time each partner has resided in the county if the application is a partnership; the names and residences of all officers and directors if the applicant is a corporation.

TALLAHASSEE MEMORIAL HEALTHCARE, INC.

BOARD OF DIRECTORS

FISCAL YEAR 2018-2019

Christopher Rumana, M.D, Chair
1300 Miccosukee Road
Tallahassee, FL 32308

Martha Barnett, Chair- Elect
1300 Miccosukee Road
Tallahassee, FL 32308

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1300 Miccosukee Road
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Gary Winchester, M.D.
1300 Miccosukee Road
Tallahassee, FL 32308

Ed Canup (ex-Officio)
1300 Miccosukee Road
Tallahassee, FL 32308

Beth Green (ex-Officio)
1300 Miccosukee Road
Tallahassee, FL 32308

Thomas Noel, M.D. (ex-Officio)
1300 Miccosukee Road
Tallahassee, FL 32308

Mark O'Bryant (ex-Officio)
1300 Miccosukee Road
Tallahassee, FL 32308

b) The classification of the certificate of public convenience and necessity being applied for.

Tallahassee Memorial Emergency Medical Services is applying for a renewal of the Advance Life Support Ground Transport Services Certificate providing services as outlined in Section 4 of this application.

2) If the applicant is a corporation, the type and number of shares outstanding and the name and the addresses of shareholders.

Tallahassee Memorial is a nonprofit corporation.

3) The date of incorporation or formation of the entity.

June 27, 1979

4) A Description of the Services to be provided.

Tallahassee Memorial HealthCare (TMH) desires to continue the ambulance transportation services that we now provide Neonate, Infant and Pediatric Advanced Life Support Transport Services; non-medically necessary TMH campus inter-facility transports; the transport of adult patients who do not meet medical necessity criteria as established by the Center for Medicare and Medicaid Services , from TMH to other local and regional facilities, with prior approval of Leon County; and the transport of patients from the TMH Emergency Center–Northeast to the main TMH facility. The services shall be provided within the territorial limits of Leon County

5) The addresses of the applicants present and proposed base station location and all sub-stations, including the methodology used to determine their locations as well as the process to be used to relocate/add substations in the future.

Tallahassee Memorial Emergency Medical Services is a hospital based transport service.

- Station 1 1300 Miccosukee Road, Tallahassee, Florida.
- Station 2 1260 Metropolitan Drive, Tallahassee, FL

6) The names and certification numbers of all Emergency Medical Technicians, Paramedics, First Responders, or other attendants employed by or affiliated with the applicant.

	Name (Paramedics)	D.L. Exp.	License #	Expiration	ACLS Exp.	PALS	EVOC Taken
1	Albanese, Haley	05/17/20	PMD526118	12/01/20	03/31/21	07/21/19	10/14/12
1	Antworth, Jon	08/15/26	PMD3101	12/01/20	07/30/20	07/31/20	04/30/85
2	Azar, George	03/23/20	PMD13354	12/01/20	05/30/20	09/14/20	10/08/93
3	Baker, Thomas	11/18/19	PMD105	12/01/20	05/31/21	06/30/19	04/12/85
4	Baldwin, Brittney	12/25/19	PMD525401	12/01/20	08/30/20	02/28/21	10/02/11
5	Benitez, Alexander	03/04/21	PMD521184	12/01/20	10/06/19	09/13/20	12/11/12
6	Bowling, Brent	07/08/19	PMD522533	12/01/20	04/30/21	02/28/20	02/10/09
7	Buerkle, Eugene	08/14/24	PMD17951	12/01/20	09/30/20	11/30/20	06/11/95
8	Burns, Randall	01/18/25	PMD529163	12/01/20	04/30/20	05/30/20	11/17/13
9	Carroll, Zachary	12/23/24	PMD527714	12/01/20	04/30/20	08/31/19	05/12/12
10	Chester-Burnett, Kendra	11/29/26	PMD525087	12/01/20	02/27/20	05/04/20	03/18/12
11	Crampton, Charles	01/24/26	PMD440	12/1/2020	08/30/20	09/30/20	04/30/85
12	Darling, Craig	06/17/20	PMD8844	12/01/20	11/30/19	10/31/20	08/27/86
13	Davis, Justin	09/01/25	PMD530483	12/01/20	10/01/19	10/01/19	12/13/15
14	Davis, Kenneth	09/25/25	PMD18742	12/01/20	02/26/20	01/01/20	08/30/93
15	Dollar, Robert (Trey)	08/11/25	PMD206362	12/01/20	01/31/21	01/31/21	03/16/02
16	Falero, Gabriel	09/24/22	PMD528087	12/01/20	01/31/21	02/28/21	03/25/15
17	Farris, Karen	08/20/22	PMD14158	12/01/20	10/23/19	09/30/20	04/16/95
18	Floyd, Clifton Forrest	07/11/25	PMD3194	12/01/20	06/30/19	07/01/19	04/07/83
19	Foran, Ethan	10/19/25	PMD534657	12/01/20	10/31/20	09/30/20	08/27/17
20	Giangrosso, Joe	10/16/21	PMD17376	12/01/20	09/30/20	06/30/20	04/23/89
21	Goodwin, Mark	06/24/20	PMD525109	12/01/20	07/30/20	07/30/20	10/09/05
22	Grabow, Chad	03/29/27	PMD530935	12/01/20	04/30/21	04/30/21	04/19/15
23	Griffin, Karolyn	11/24/25	PMD510641	12/01/20	5/01/2019	07/31/19	10/06/02
24	Haire, Dustin	04/27/22	PMD528182	12/01/20	01/31/20	01/31/20	10/02/11
25	Houston, Joshua	09/21/25	PMD516307	12/01/20	10/31/20	10/31/20	04/03/04
26	Koegel, Robert Thomas	04/19/26	PMD19177	12/01/20	11/30/20	07/05/19	03/14/06
27	Law, Kristin	09/27/19	PMD524578	12/01/20	04/30/20	9/31/2020	05/27/10
28	Lippman, Sharon	02/08/21	PMD4338	12/01/20	04/24/20	05/31/19	04/12/85
29	Mays, Steven	06/11/20	PMD12524	12/01/20	02/26/20	11/01/19	09/01/89
30	McAdams, Tyler	09/13/19	PMD532968	12/01/20	09/30/19	10/31/19	12/13/15
31	McGuire, Katlynn	12/22/20	PMD532818	12/01/20	02/28/21	06/30/19	04/12/15
32	Megna, Holly Smith	10/03/26	PMD519881	12/01/20	02/28/21	4/30/2021	05/13/06

	Name (Paramedics Cont.)	D.L. Exp.	License #	Expiration	ACLS Exp.	PALS	EVOC Taken
33	Mitchka, Jacqueline Holladay,	02/05/26	PMD527499	12/01/20	05/30/21	12/01/19	12/08/12
34	Mott, John R	04/09/25	PMD1625	12/01/20	09/01/20	05/31/20	04/30/85
35	Pippin,Roy	04/05/20	PMD4917	12/01/20	01/01/20	01/01/20	03/25/95
36	Register, Michael	03/05/21	PMD16255	12/01/20	05/31/20	07/31/20	01/22/95
37	Reilly, William	02/09/20	PMD526237	12/01/20	07/30/19	01/10/20	04/30/10
38	Roberts, Jake	04/11/23	PMD527017	12/01/20	11/30/19	05/31/20	08/29/12
39	Rosier, Penny	01/02/26	PMD530767	12/01/20	08/30/19	10/31/20	08/27/17
40	Sessions, Gary Scott	02/03/24	PMD510442	12/01/20	03/30/20	12/20/19	11/19/00
41	Shaver, Keith Douglas	02/27/22	PMD526120	12/01/20	09/30/20	01/31/21	01/11/15
42	Swain, Charles	07/08/25	PMD12945	12/01/20	04/12/20	09/30/20	01/25/91
43	Walker, Travis	09/13/20	PMD18830	12/01/20	05/30/20	08/01/19	03/26/97
44	Falero, Gabriel	09/24/22	PMD528087	12/01/20	01/31/21	02/28/21	03/25/15

As of 6/4/19

	Neonate Nurses	License #	Expiration
1	Forbes, Stacie	RN3203672	04/30/21
2	Kuczynski, Rachel	RN9324694	04/30/21
3	Johnson, Diana	RN9213080	04/30/21
4	Ritzel, Dolly	RN9168741	04/30/20
5	Smith, Dawn	RN9280031	04/30/20
6	Truman, Stephanie	RN9384513	04/30/20
7	Wimsatt, Brittany	RN9324692	04/30/21
	Respiratory Therapists	License #	Expiration
1	Brown, Duncan	RT3853	05/31/21
2	Farris, Kristan	RT10847	05/31/21
3	Hall, Julie	RT10607	05/31/21
4	Johnson, Christopher Bryan	RT8715	05/31/21
5	Ritter, Mary	RT6562	05/31/21
6	Posey, Justin	RT11597	05/31/21
7	Raymond, Kim	RT3910	05/31/21
8	Reinert, Jane	RT3686	05/31/21
9	Simmons, Arrie Michelle	RT3228	05/31/21
10	Sturgis, Stephanie	RT10037	05/31/21

As of 6/1/2019

	Name (EMT)	D.L. Exp.	License #	Expiration	BLS Exp.	EVOC Taken
1	Anderson, Jr., Anton	07/14/26	EMT540789	12/01/20	03/31/20	12/13/15
2	Aronson, Lauren	09/10/20	EMT562063	12/01/20	09/30/19	07/15/18
3	Bailey, Alec Vincent	09/16/21	EMT562514	12/01/20	12/31/20	11/17/18
4	Burnett, Kaitlyn	08/09/21	EMT537679	12/01/20	11/30/20	03/18/12
5	Ceasor, Brandon	06/29/25	EM559548	12/01/20	11/30/20	02/25/17
6	Chronister, Cynthia	01/24/21	EMT68089	12/1/2020	02/20/20	07/08/92
7	Combates, Jessica	06/12/25	EMT564267	12/01/20	06/30/20	12/02/18
8	Cuevas, Matt	03/16/24	EMT522306	12/01/20	12/31/20	05/27/10
9	Desile, Josue	09/21/26	EMT559613	12/01/20	11/30/20	01/28/17
10	Diaz Hernandez, Juan Manuel	08/30/20	EMT562086	12/01/20	10/31/19	07/15/18
11	Dilks, John	01/28/23	EMT554740	12/01/20	02/28/20	12/13/16
12	Downey, George	10/18/19	EMT555797	12/01/20	08/31/19	02/17/16
13	Fetter, Janie	08/19/26	EMT551358	12/01/20	02/28/21	12/13/15
14	Fleming, Brandon	03/18/22	EMT547410	12/01/20	11/30/20	09/27/09
15	Grant, Latoya	01/06/25	EMT559645	12/01/20	04/30/21	02/25/17
16	Hutchins, Sam	05/07/20	EMT559831	12/01/20	5/31/21	05/05/18
17	Jeudy, Jonathan	01/29/21	EMT548310	12/01/20	7/1/19	12/14/14
18	Kennedy, William	03/19/22	EMT500714	12/01/20	07/31/20	10/28/00
19	Landy, Shannon	03/24/20	EMT560828	12/01/20	9/30/019	05/05/19
20	Leoni, Reanna	06/15/19	EMT563373	12/01/20	06/30/20	12/02/18
21	McCarten, Shannon	03/06/27	EMT552486	12/01/20	1/31/21	12/13/15
22	McLanahan, Todd	04/11/27	EMT69751	12/01/20	11/30/20	05/23/95
23	Mitchell-Cotteral, Demar	01/07/22	EMT562760	12/01/20	07/30/20	04/01/18
24	Moss, Jeremy	10/29/26	EMT547929	12/01/20	07/31/19	12/14/14
25	Parker, Shawn	11/10/25	EMT549291	12/01/20	5/31/21	02/01/18
26	Pennock, Kyle	02/15/25	EMT546048	12/01/20	10/31/20	05/23/14
27	Pleas, Javon Wesley	10/21/19	EMT560090	12/01/20	08/31/20	07/12/16
28	Rizzi, Ivy	01/11/27	EMT559349	12/01/20	02/28/20	05/05/18
29	Robrahn, Sedona	06/12/21	EMT 562039	12/01/20	04/30/20	07/15/18
30	Rutten, Crystal Mander	11/09/21	EMT534372	12/01/20	08/31/20	9/29/
31	Sigaran, Genevieve	07/21/19	EMT554043	12/01/20	11/30/20	01/24/16
32	Slattery, Robert	11/16/19	EMT561699	12/01/20	07/31/19	07/15/18
33	Titus, Patrick	11/14/25	EMT550975	12/01/20	1/31/20	04/19/15
34	Turner, Emily	02/16/22	EMT564769	12/01/20	03/31/20	12/02/18
35	Unger, Justin	02/21/27	EMT557003	12/01/20	08/31/19	05/07/17
36	Washington, Kevin	11/20/26	EMT505347	12/01/20	04/30/20	02/07/04

7) The year, model, type, department permit number (when received by department), motor vehicle or FAA registration number and mileage of every ambulance, rescue vehicle or other type of transporting or responding vehicle used by the applicant.

TMH #	State EMS #	Manufacturer	Model	Year	Modified	Mileage	V.I.N.	Tag #
4-1	19611	Ford	F-350	2015	Frazer	84,021	1FDRF3GT0GEA29398	MFW 47E
4-2	16666	Ford	F-450	2010	Frazer	82,962	1FDAF4GRXAE25750	MFV 42Q
4-3	17389	Dodge	RAM 3500	2012	Frazer	134,123	3C7WDSBL8CG180431	MIH 92Y
4-4	18343	Dodge	RAM 3500	2014	Frazer	56,969	3C7WRKBL9EG118122	MFW 52E
4-5	21092	Ford	F-350	2017	Frazer	36,976	1FDRF3GT5HEC65496	MIN 46R

AS of 6/11/2019

8) Applicants desiring to provide ground transport must provide a written plan describing the procedures to replace vehicles at intervals of no greater than five years or 200,000 miles, whichever occurs first.

TALLAHASSEE MEMORIAL HEALTHCARE
TALLAHASSEE, FLORIDA

POLICY AND PROCEDURE NO. 170.216.001

Date Created: April 22, 2006
Revised: June 10, 2019

VEHICLE REPLACEMENT POLICY

I. **POLICY:**

Tallahassee Memorial Healthcare will receive maximum service and efficiency from all EMS vehicles purchased to transport patients.

II. **PROCEDURE:**

- A. Any EMS vehicles equipped or operated as an ambulance must be equipped with emergency lights, emergency siren and patient care equipment in accordance with Department of Transportation (DOT) specifications for ambulances. All units are certified to meet or exceed KKK-1822 star of Life ambulance specifications by Atlanta Testing & Engineering, Norcross, Georgia. All ambulances will meet NFPA Ambulance Standards.
- B. EMS vehicles will be replaced at 200,000 miles or 5 years whichever occurs first.
- C. EMS vehicles over 5 years old that have not reached 200,000 miles will remain in the fleet in a reserve capacity or used for on campus/local transport only.
- D. The Paramedic Supervisor compile a list annually of suggested EMS vehicle replacements. This list will be based on age, mileage, safety and maintenance costs associated with the vehicle.
- E. The Transport Chief Paramedic will provide this list to the Emergency Services Executive Director for review, approval and budgeting.

III. **RESPONSIBILITIES**

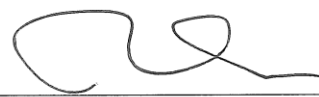
It is the responsibility of the Transport Chief Paramedic to ensure compliance to this policy.

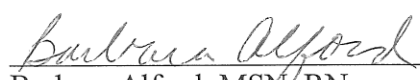
IV. REFERENCES

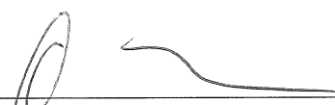
A. Florida Statutes §401.2101 – 401.465, Medical Transportation Services

B. Florida Administrative Code 64J-1, Emergency Medical Services



Jon Antworth, Chief Transport Paramedic
Emergency Medical Services

Ryan Smith, Executive Director
Clinical Operations

Barbara Alford, MSN, RN
VP/Chief Clinical & Nursing Officer

Colby Redfield, MD
Medical Director
Emergency Medical Services

Policy and Procedure Review and Revision History:

Creation Date: April 22, 2006

Revised: 09/01/2009

Revised: 05/19/2003

Revised: 06/02/2016

Revised: 06/10/2016

9) Applicants desiring to provide ground transport must provide a written plan describing the procedures to replace non-disposable medical equipment based on manufacturer standards.

TALLAHASSEE MEMORIAL HEALTHCARE
TALLAHASSEE, FLORIDA

POLICY AND PROCEDURE NO. 170.216.002

Date Created: 4/22/2006

Revised: 06/10/2019

NON-DISPOSABLE MEDICAL EQUIPMENT REPLACEMENT POLICY

I. POLICY:

- A. Tallahassee Memorial Healthcare will receive maximum service and efficiency throughout the life of all medical equipment purchased to serve its patients.
- B. This policy is in reference to any non-disposable medical purchased for use of a Tallahassee Memorial ambulances

II. PROCEDURE:

- A. Any medical supplies that are dated will be disposed of on or prior to the manufacturers expiration date.
- B. Any medical supplies without an expiration date will be disposed of per manufacturer's recommendation for of breach integrity of the sterile packaging.
- C. Medical electronic equipment (monitors, suction, etc.) will be inspected by the Clinical Engineering Department every 6 months per their guidelines/policies.
- D. Equipment will be removed from service at the recommendation.
- E. The Transport Chief Paramedic will compile a list annually of suggested equipment replacements. This list will be based on age, patient safety, serviceability of the equipment, availability of replacement parts and Clinical Engineering Department recommendations. This list will be provided to the Emergency Services Executive Director for review, approval and budgeting.

III. RESPONSIBILITY:

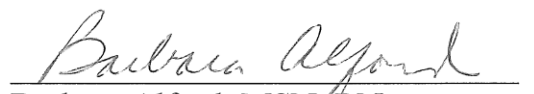
It is the responsibility of the Transport Chief Paramedic to ensure compliance to this policy.

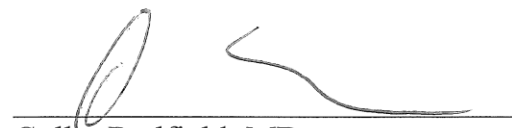
IV. REFERENCES:

- A. Florida Statutes §401.2101 – 401.465, Medical Transportation Services
- B. Florida Administrative Code 64J-1, Emergency Medical Services



Jon Antworth, Chief Transport Paramedic
Emergency Medical Services

Ryan Smith, MSN, RN
Executive Director, Clinical Operations

Barbara Alford, MSN, RN
VP/Chief Clinical & Nursing Officer

Colby Redfield, MD
Medical Director,
Emergency Medical Services

Policy and Procedure Review and Revision History:

Creation Date: 04/22/2006

Reviewed: 09/20/2009

Revised: 05/21/2013

Reviewed: 06/02/2016

Revised: 06/10/2019

10) Air ambulance providers must include a copy of their most recent operations manual and FAA Part 135 Certificate

Not applicable Tallahassee Memorial Emergency Medical Services only provides ground transport.

11) A description of the applicant(s communication system, including its assigned frequency, call number, mobiles, portables, range and hospital communications ability.

Tallahassee Memorial is assigned **MED 22 156.7** by the State Technology Office.

Tallahassee Memorial E.M.S. has the ability for State Medical Coordination on **MED 8 167.9**

Tallahassee Memorial E.M.S. has communications capabilities with Tallahassee Memorial Emergency Department on **MED 22 156.7**

Tallahassee Memorial E.M.S. has communications capabilities with Capital Regional Medical Center Emergency Department on **MED 42 156.7**

Tallahassee Memorial EMS uses Cellular Phone (Verizon) to provide a Data link to the Emergency Department Lifenet EKG receiving station.

Tallahassee Memorial Call Number KVZ472

12) A proposed operating budget for the purpose of demonstrating financial ability to perform and commitment to providing described services.

Salaries	\$ 418,187.00
Benefits	\$ 73,967.00
Pension	\$ (3,873.00)
Supplies	\$ 55,386.00
Drugs	\$ 2,456.00
Food, catering	\$ 2,400.00
Maintenance	\$ 29,840.00
Utilities	\$ 1,620.00
Dues,Subscriptions,Licenses	\$ 268.00
Hardware, software	\$ 12,876.00
Travel	\$ 2,000.00
Total Expenses	\$ 595,127.00

13) Verified proof that the applicant and its employees possess all required federal and state licenses and permits.

All Paramedic, EMT, Nurse and Respiratory Therapist License Listed verified at State of Florida, Floridashealth.com License Verification site.

Copies of all Paramedic and Emergency Medical Technicians State licenses, CPR and Advance Cardiac Life Support Cards, and Driving Records and Driving Licenses kept on file in Tallahassee Memorial Emergency Medical Services office in State compliance file. Located at 1300 Miccosukee Rd., Tallahassee, Florida.

Medical Director's, Medical Doctor License



Department of Health



COLBY SCOTT REDFIELD

License Number: ME126222

Data As Of 3/15/2018

Profession	Medical Doctor
License	ME126222
License Status	CLEAR/ACTIVE
License Expiration Date	1/31/2020
License Original Issue Date	11/20/2015
Address of Record	1300 MICCOSUKEE RD TALLAHASSEE, FL 32308 UNITED STATES
Controlled Substance Prescriber (for the Treatment of Chronic Non-malignant Pain)	No
Discipline on File	No
Public Complaint	No

The information on this page is a secure, primary source for license verification provided by the Florida Department of Health, Division of Medical Quality Assurance. This website is maintained by Division staff and is updated immediately upon a change to our licensing and enforcement database.

Medical Director's Controlled Substance Registration Certificate

DEA REGISTRATION NUMBER	THIS REGISTRATION EXPIRES	FEE PAID
FR4941161	04-30-2020	\$731
SCHEDULES	BUSINESS ACTIVITY	ISSUE DATE
2,2N,3 3N,4,5	PRACTITIONER	04-11-2017
REDFIELD, COLBY TALLAHASSEE MEMORIAL HEALTHCARE DEPT OF EMERGENCY 1300 MICCOSUKEE RD TALLAHASSEE, FL 32308		

CONTROLLED SUBSTANCE REGISTRATION CERTIFICATE
UNITED STATES DEPARTMENT OF JUSTICE
DRUG ENFORCEMENT ADMINISTRATION
WASHINGTON D.C. 20537

Sections 304 and 1008 (21 USC 824 and 958) of the Controlled Substances Act of 1970, as amended, provide that the Attorney General may revoke or suspend a registration to manufacture, distribute, dispense, import or export a controlled substance.

THIS CERTIFICATE IS NOT TRANSFERABLE ON CHANGE OF OWNERSHIP, CONTROL, LOCATION, OR BUSINESS ACTIVITY, AND IT IS NOT VALID AFTER THE EXPIRATION DATE.

State of Florida Department of Health Bureau of Emergency Medical Services Advance Life Support License

STATE OF FLORIDA
DEPARTMENT OF HEALTH
BUREAU OF EMERGENCY MEDICAL OVERSIGHT

ADVANCED LIFE SUPPORT SERVICE LICENSE

This is to certify that: **TALLAHASSEE MEMORIAL HEALTHCARE, INC.** Provider Number #3701
Name of Provider

1300 MICCOSUKEE ROAD, TALLAHASSEE, FLORIDA 32308
Address

has complied with Chapter 401, Florida Statutes, and Chapter 64J-1, Florida Administrative Code, and is authorized to operate as an Advanced Life Support Service subject to any and all limitations specified in the applicable Certificate(s) of Public Convenience and Necessity and/or Mutual Aid Agreements for the County(s) listed below:

LEON
County (s)


Steve A. McCoy
Emergency Medical Services Administrator
Florida Department of Health

THIS CERTIFICATE EXPIRES ON: 04/04/2021

Clinical Laboratory Improvement Amendments, Certificate of Waiver

CLIA Laboratory Demographic Information Report

Report Options

CLIA Number: 10D1025091

Certificate / Application Type	Name and Address / CLIA Number	Telephone #	Certificate Expiration Date	Lab Testing Performed In
Waiver	TALLAHASSEE MEMORIAL HOSPITAL 1300 MICCOSUKEE RD TALLAHASSEE, FL 32308 #10D1025091	(850) 431-5818	4/27/2020	Ambulance

14) The name of the municipalities and the description of all geographic areas that the applicant has previously been authorized to serve, including Leon County, any other county in Florida, or any other state.

Tallahassee Memorial currently has a certificate of public convenience and necessity to operate in Leon County Florida.

Tallahassee Memorial also travels to Georgia and Alabama and the following counties in Florida Taylor, Madison, Calhoun, Bay, and Jackson to pick up neonates.

15) A list of current charges or a schedule of proposed charges for transportation and treatment of patients and a written statement of intent to notify the board in writing of any proposed future fee increase, including rationale for the increase.

See attached fee schedule of current rates. Tallahassee Memorial will increase fee annually on October 1st. That annual increase will be approximately equal to the Medical Care Consumer Price Index as reported by the US Department of Labor Bureau of Labor Statistics. Additionally, the hospital will consider factors directly impacting operating costs, such as fuel and insurance costs.

Description	CHG AMT
ALS SCHEDULED	1324.99
BLS SCHEDULED	993.74
SPECIAL CARE TRANSPORT	2318.73
AMBULANCE TRANSPORT /MILE,	31.07

16) A sworn statement signed by the applicant or his/her authorized representative stating that all the information provided by the applicant in the application is true and correct.

OATH

I swear or affirm that the information provided and statements contained in this Application (including any accompanying supplements) to the best of my knowledge and belief are true, correct, and complete.



SIGNATURE

Jon Antworth Date: 6/25/2019

17) Pursuant to Rules 64E-2.002(4) and 64E-2.003(7), F.A.C., a list of medical equipment and supplies to be equipped and maintained in each emergency medical services vehicle.

Tallahassee Memorial Emergency Medical Services complies with State of Florida Rules 64E-2.002(4) and 64E-2.003(7), F.A.C., Attached is a vehicle check-in sheet with equipment, medications and supplies carried on each licensed vehicle.

Tallahassee Memorial			
Vehicle#: 4- 1		EMERGENCY MEDICAL SERVICES	
Ambulance Check-In Sheet		Date: _____	
Mileage: _____		Medics: _____ / _____	
CAB ☐ Drive keys ☐ Charge Keys ☐ 2) Drivers License ☐ 2) State Licenses ☐ Fuel 7/8 Tank ☐ Generator(start) ☐ Fuel 7/8 Tank ☐ Gas Cards BP GATE ☐ 2) Sirens ☐ Horn / Wipers ☐ Cab Light ☐ A/C & Heat ☐ Headlights High/Low ☐ Emergency Lights ☐ Load Lights side/rear ☐ Map Book ☐ Brakes ☐ Tail/Clearance Lights ☐ Turn Signals ☐ UHF Radio ☐ Oil,Brake,Coolant Levels ☐ Transmission Fluid ☐ Back-up Alarm ☐ Tire wear/Pressure ☐ Cell Phone & Charger ☐ Insurance Card ☐ Vehicle Registration ☐ Spotlight ☐ NO SMOKING SIGN ☐ DEF(4-3) _____ % ☐ Lift Operational (4-2)	Driver Rear Comp. inside/outside ☐ 1ea. C-Collars AD/PED ☐ 3) Quick Straps ☐ 1ea. Headbeds ☐ 1) Extra O ₂ Cylinder "E" ☐ 1) Extra Air(NICU) "E"(4-2) ☐ 1) Reflective Traingles ☐ 1) Disinfectant wipes ☐ 1) Bottle Cavicide MODULE ☐ 1)Rear Radio ☐ AC/ Heat ☐ Interior Lights ☐ NO SMOKING SIGN ☐ Fire Extinguisher ☐ Sharps Box ☐ 1ea. Gloves S/M/L ☐ 1) Stretcher /3 straps ☐ 1) Smooth Mover (4-2) OXYGEN COMPARTMENT ☐ H or M 1000psi Min. ☐ 1) Wrench Portable Oxygen ☐ 1000psi "E" " Walk about" ☐ 1) Adult NRB Mask ☐ 1) Adult Nasal Cannula LINENS ☐ 8) Sheets ☐ 2) Blankets ☐ 2) Pillow ☐ 2) Pillow Cases ☐ 8) Towels SUCTIONS Portable Suction ☐ 1) Suction Tubing ☐ 1) Yankuer Cath. Vehicle Suction ☐ 1) Tubing ☐ 1) Yankuer Cath. Under CPR Seat ☐ Bed Pan ☐ Urinal ☐ Toilet Paper	Driver Side Seal# Driver Side Top Shelf Box 1 s ☐ 1) OB Kit ☐ 3) Isolation Gowns ☐ 2) Burn Sheets ☐ 2 Multitrauma Dressings Driver Side Middle Shelf Box 1 s ☐ Asst. BP Cuffs Box 2 ☐ 1) Set of Restraints Box 3 L ☐ 1) Infant BVM Box 4 L ☐ 1) Pediatric BVM Box 5 L ☐ 1) Adult BVM Driver Side Bottom Shelf Box 1 s ☐ 2) Kerlix ☐ 2) Kling ☐ 2) ACE Wraps ☐ 3) ABD Pads Box 2 s ☐ 10) Sterile 2X2 ☐ 10) Sterile 4X4 ☐ 2) Triangular Bandages ☐ 2) Vaseline Gauze ☐ 1) 1" Adhesive tape ☐ 1) 3" Adhesive Tape Box 3 s ☐ 1) Nebulizer Box 4 s ☐ 2) # 14 Fr. Suction Caths. ☐ 1) Tonsil Suction ☐ 1) Suction Cannister ☐ 1) Suction Tubing ☐ 1) 80cc.syringe (Cath tip) Box 5 L ☐ 2) Nasal Cannulas ☐ 2 Non-Reb. Masks ☐ 2) Nasal Cannulas Ped. ☐ 2ea) Infant & child O2 Masks ☐ 2) O2 Tubing ☐ 1) O2 Connector Box 6 s ☐ 10 Emesis Bags	Front Wall Left Seal# Front Wall Top Shelf (left) Box 1 L ☐ 1) 1000cc N.S. ☐ 1) 500cc N.S. Box 2 ☐ 2) 1000cc L.R. Box 3 ☐ 1) Pressure Infuser Box 4 L ☐ 2) NS Irrigation Fluid Front Wall Middle Shelf (left) Front Wall Bottom Shelf (left) Box 1 L ☐ 2) ET Capno ☐ 2) Capno Nasal ☐ Electrodes Adult/Ped ☐ 1) Adult Pacer Pad ☐ 1) Roll LP Paper ☐ 1) Ped. Pacer Pads ☐ 1) Adt. Disp. SpO ₂ Finger Probe ☐ 1) Ped. Disp. SpO ₂ Finger Probe ☐ Standing Orders Adult ☐ Standing Orders Peds. ☐ EMS Communication Bk ☐ Hazmat Book (orange) Front Wall Top Shelf (right) Front Wall Right Cabinet Seal# Box 1 ☐ 1) Stuffed animal Box 2 ☐ 1) Neonate Circuit (4-2,4-4) Front Wall Middle Shelf (right) Box 1 L ☐ 1) Pedi-Mate or Car seat Box 2 ☐ 30) Disaster Tags Front Wall Bottom Shelf (right) Box 1 s ☐ 3) Trash Bags ☐ 2) Biohazard Bags ☐ 1) Rain Cover ☐ 2) "D" cell Batteries Box 2 s ☐ 5) Surgical Masks ☐ 5) Resp. Protective Mask

CARDIAC BOX	CARDIAC BOX (Cont.)	BROSELOW PEDIATRIC BAG	LIFEPAK 12/15
Seal # _____	1) Flashlight	Seal # _____	3) Batteries
Earliest Exp. Date: _____	1) Trauma Scissors	Earliest Exp. Date: _____	Charger
3) Adenocard 8mg./2ml	1) Kling	Large Bag Inside Lid	1) 3 Leads Cable
2) Albuterol	1) IV Tourniquet	1) Pediatric Arm Board	12 Leads cable
3) Amioderone 150 mg.	RESPIRATORY BOX	1) Infant BP Cuff	Electrodes Adult
10) Aspirin 81 mg.	Seal # _____	1) Pediatric BP Cuff	Defib & Sync Check
3) Atropine 1 mg.	Earliest Exp. Date: _____	1) L-Scope Handle	Paper/ Printer
2) Atrovent 0.5mg/2.5 ml	1) Adult BVM	1) Pediatric Stethoscope	Time/Date Correct
1) Benadryl 50mg/ml	1) Laryngoscope	1) Ped. Magill Forceps	1) Defib Pads
1) Ca. Chloride 1G/10ml	2) "C" cell Batteries	Inside Broselow	1) Prep Razor electric
1) Cardizem 100mg/50cc	1ea. Miller Blades	1) Infant BVM with Mask	2) Benzoin Swabs
1) Dextrose 50%	Adult-Pediatric	1) Pediatric BVM w Mask	1) Pacer Cables
1) Dopamine 400mg/250ml	1ea. Mac Blades Adult- Infant	ZIPLOCK BAG	1) Adult BP Cuff
2) Epinephrine 1:1,000	Endotracheal Tubes	2) Kling	1) Pediatric Cuff
2) Epinephrine 1: 10,000	in the following ranges	1) Tape	1) Infant Cuff
1) Furosimide 100 mg.	2) 2.5mm & 5.0mm uncuffed	1) Ped. Nasal Cannula	1) Pulse ox Cable
1) Glucagon	2) 5.0mm & 7.0mm cuffed	1) Thermometer	1) Pulse ox finger Probe
1) Insta Glucose	2) 7.5mm & 9.0mm cuffed	1) Thermal Blanket	1) Pulse ox disposable
1) Labetalol 20 mg.	1) Stethoscope	1) 3-way stopcock	PORTO ₂ -Vent CPAP
2) Lidocaine 100 mg.	2) Surgilube	1) Meconium Suction	1) CPAP Unit
1) Lidocaine Drip 2G/500ml	1) Stylette Adult	1) Extra Bulb Syringe	2) CPAP Circuits
1) Mag. Sulfate. 10G/20ml	1) Roll cloth Tape	Outside Pocket	1) O ₂ Cylinder Full"D"alum
2) Narcan 0.4 mg.	2) Safety Glasses	1) Broslow Tape	1) Large Mask
1) Nitro Spray	2) 10cc. Syringes	Red/Pink Pouch	2) Medium Masks
1) Nitro Bid Patch	1ea. Oral Airways Ped./Adult	I.V. & O ₂ Module	1) Small Mask
1) Pediatric Bicarb	1ea. Nasal Airways	Intubation Module	1) O ₂ Wrench
1) Procainamide 1G/10ml.	24,26,28,30	Intraosseous Access Mod.	
1) Sodium Bicarb 50 mEq.	1) Nebulizer Masks	Purple Pouch	Notes:
1) Solumedrol 125 mg.	1) Adult Magill Forceps	I.V. & O ₂ Module	
1) Thiamine 100 mg.	1) #4 King Airway	Intubation Module	
2) Toradol 30 mg./ml.	1) 80cc. Luer lock	Intraosseous Access Mod.	
2) Tylenol 500 mg.	1ea. Flowsafe II CPAP Med & Lrg	Yellow Pouch	
2) Vasopressin 20 units/ml		I.V. & O ₂ Module	
2) Zofran 4mg./2ml	NARCOTICS Cabinet	Intubation Module	
2) Saline Flushes	Locked	Intraosseous Access Mod.	
2ea. Angiocaths	Narcotics Box	White Pouch	
14,16,18,20,22,24	Seal# _____	I.V. & O ₂ Module	
1) B.P / Stethoscope	Earliest Exp. Date: _____	Intubation Module	
2) Blue Test tubes	2) Morphine Sulfate 10 mg.	Intraosseous Access Mod.	
2) Orange Test tubes	2) Diazepam (Valium) 10mg.	Blue Pouch	
2) Purple Test tubes	2) Lorazepam (Ativan) 4mg.	I.V. & O ₂ Module	
2ea. 1,3,5,10cc syringes	1) Hydromorphone (Dilaudid) 2mg.	Intubation Module	
1) 20 cc Syringe	1) Midazolam (Versed) 5mg.	Intraosseous Access Mod.	
6 needles total	1) Sign Book	Orange Pouch	
Between 18ga. & 25ga.	Send text	I.V. & O ₂ Module	
2) Bioclusive Dressings		Intubation Module	
1) Roll Tape	Glucometer	Intraosseous Access Mod.	
1) Extension Set	1) Glucometer	Green Pouch	
6) Alcohol Swabs	10-30 Test Strips	I.V. & O ₂ Module	
1) 3-way Stopcock	5) Lancets	Intubation Module	
2ea. Micro/Macro Drips	1 ea. High/Low Control	Intraosseous Access Mod.	
1) N.S. 500 cc	Calibrator		

REV.05/12/2016

18) A statement, policy, certificate, or irrevocable letter of commitment to insure, from an insurance company satisfactory to the board, shall be attached to the application, and shall specify coverages/limits for public liability, property damage and malpractice insurance as provided in this article or a surety bond conditioned for the payment and satisfaction of any final judgment as required by this article.

Attachments:

Attachment 18.1 Insurance Information

Attachment 18.2 Insurance Information

Attachment 18.3 Insurance Information

19) Compilation statement showing assets and liabilities prepared by a certified public accountant.



Report of Independent Auditors

To the Board of Directors of
Tallahassee Memorial HealthCare, Inc.

We have audited the accompanying consolidated financial statements of Tallahassee Memorial HealthCare, Inc. and Subsidiaries ("TMH, Inc."), which comprise the consolidated balance sheets as of September 30, 2018 and 2017, and the related consolidated statements of operations, changes in net assets and cash flows for the years then ended.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to TMH, Inc.'s preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of TMH, Inc.'s internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Tallahassee Memorial HealthCare, Inc. and Subsidiaries as of September 30, 2018 and 2017, and the results of their operations, changes in their net assets, and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

A handwritten signature in black ink that reads "PricewaterhouseCoopers 22P".

December 10, 2018

PricewaterhouseCoopers LLP, 4040 West Boy Scout Boulevard, Suite 1000, Tampa, FL 33607-5745
T: (813) 229 0221, F: (813) 229 3646, www.pwc.com/us

	2018	2017
Assets		
Current assets		
Cash and cash equivalents	\$ 322,549,958	\$ 291,790,394
Short-term investments	12,745,992	12,049,255
Assets limited as to use	13,225,172	13,585,520
Patient accounts receivable, net of allowance for doubtful accounts of approximately \$93,900,000 and \$88,600,000 as of September 30, 2018 and 2017, respectively	91,048,606	85,301,671
Inventories	10,240,352	10,006,739
Due from Medicare	-	6,517,083
Other current assets	22,912,553	23,588,276
Total current assets	472,722,633	442,838,938
Assets limited as to use		
Held by trustee	111,061,717	191,862,315
Less amount required to meet current obligations	(13,225,172)	(13,585,520)
Total assets limited as to use	97,836,545	178,276,795
Long-term investments	8,397,373	7,985,419
Property, plant and equipment, net	462,254,609	368,704,807
Other assets	62,529,025	10,285,595
Total assets	\$ 1,103,740,185	\$ 1,008,091,554
Liabilities and Net Assets		
Current liabilities		
Accounts payable and accrued expenses	\$ 85,432,123	\$ 75,096,123
Current portion of long-term debt	3,246,874	3,012,579
Current portion of pension liability	-	17,866,616
Due to Medicare	1,858,784	-
Other current liabilities	9,611,016	9,533,292
Total current liabilities	100,148,797	105,508,610
Long-term debt, net of current portion	386,700,855	392,313,863
Long-term pension liability	-	8,916,116
Other liabilities	38,028,834	37,377,249
Total liabilities	524,878,486	542,115,838
Commitments and contingencies		
Net assets		
Unrestricted	559,692,982	447,080,129
Temporarily restricted	10,798,644	10,937,468
Permanently restricted	8,370,073	7,958,119
Total net assets	578,861,699	465,975,716
Total liabilities and net assets	\$ 1,103,740,185	\$ 1,008,091,554

The accompanying notes are an integral part of these consolidated financial statements.

20) A copy of the applicant's management plan which shall include a copy of standard operating procedures.

Attachment 20.1 Adult Protocols
Attachment 20.2 Pediatric Protocols

21) Proof that the applicant has employed or contracted with a medical director qualified pursuant to F.S. § 401.265.

Attachment 21.1 Medical_Directors_Contract

22) Any other information as may be reasonably required by the board.

23) The application fee except for renewals shall be in the amount of \$5,000.00, except for the state, agencies of the state, and political subdivisions of the state, who shall not be required to submit such application fee.

Application is for renewal of current Certificate of Public Convenience and Necessity which expires December 31, 2019.

Appendix

A. Certificate of Public Convenience and Necessity

LEON COUNTY Certificate of Public Convenience and Necessity Emergency Medical Services

Whereas, Tallahassee Memorial Healthcare, Inc., (TMH) has made application for the renewal of their Certificate of Public Convenience and Necessity to provide Advanced Life Support and Basic Life Support Ground Ambulance Services to the citizens of Leon County, Florida; and

Whereas, the above named service provider affirms that it will maintain compliance with the requirements of the Emergency Medical Services Act (Chapter 401, F.S.) and rules (Chapter 64J-1, F.A.C.); and

Whereas, the above named service provider affirms that it will comply with Article III of the Code of Laws of Leon County, Florida; and

Whereas, the governing body of Leon County has considered recommendations of the Emergency Medical Services Advisory Council.

Now therefore, The Board of County Commissioners of Leon County hereby issues a Certificate of Public Convenience and Necessity with limitations as prescribed on the Certificate, to Tallahassee Memorial Healthcare, Inc. to provide the following services only: neonatal, infant, and pediatric Advanced Life Support transport services; non-medically necessary TMH campus interfacility transports; the transport of adult patients who do not meet medical necessity criteria as established by the Center for Medicare and Medicaid Services; from TMH to other local or regional facilities, with prior approval of Leon County; and the transport of patients from the TMH Emergency Center – Northeast to the main TMH facility. These service shall be provided within the territorial limits of Leon County, Florida. The Certificate holder shall maintain the level of service as outlined in their application throughout the term of this Certificate, and shall conform and comply with all rights and duties granted by the certificate.



Date Issued: December 31, 2016
Date of Expiration: December 31, 2019
(Unless Certificate is sooner revoked or suspended)

LEON COUNTY, FLORIDA

BY: Bill Proctor
Bill Proctor, Chairman
Board of County Commissioners

ATTEST:
Bob Inzer, Clerk of the Court and Comptroller
Leon County, Florida

BY: [Signature]

Approved as to Form:
Leon County Attorney's Office

BY: [Signature]
Herbert W.A. Thiele, Esq.
County Attorney

B. Leon County E.M.S. Ordinance

ARTICLE III. - EMERGENCY MEDICAL TRANSPORTATION SERVICES^[3]

Footnotes:

--- (3) ---

Editor's note—Ord. No. 04-09, § 1, adopted April 13, 2004, repealed art. III, §§ 8-56—8-77, in its entirety. Said ordinance further provided for a new art. III to read as herein set out. Formerly, said article pertained to similar subject matter as enacted by Ord. No. 90-22, adopted May 29, 1990; as amended. See the Code Comparative Table for a detailed analysis of inclusion.

Sec. 8-56. - Purpose and scope.

This article is enacted pursuant to F.S. § 401.25(6), for the purpose of providing standards and necessary regulations for the issuance of certificates of public convenience and necessity for basic and advanced life support services. This article shall apply and be in force within the incorporated and unincorporated areas of Leon County. To the extent this article is more restrictive than the requirements of Chapter 401, Florida Statutes, or Rule 64E-2, Florida Administrative Code, the provisions of this article shall prevail.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-57. - Definitions.

The definitions set forth in F.S. § 401.23, are incorporated herein by reference and are not generally repeated. When used in this article, the following terms shall have the meanings ascribed to them by this section:

Ambulance or emergency medical services vehicle: shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Ambulance driver: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Advanced life support: Shall have the same meaning as defined in F.S. 401.23, as amended from time to time.

Advanced life support service: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Air ambulance: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Basic life support: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Basic life support service: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Board: The Board of County Commissioners of Leon County, Florida.

Certificate: A certificate of public convenience and necessity for a specific classification of services issued by the board of county commissioners to a private or public entity which authorizes the entity to provide emergency medical services countywide.

Council: The Emergency Medical Services Advisory Council of Leon County.

County: The incorporated and unincorporated areas within the territorial limits of Leon County, Florida.

Department: The Florida Department of Health.

Emergency medical technician: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

First responder: Pursuant to F.S. § 401.435, an individual who possesses the required state certification and licensure credentials to provide first response and is acting under proper medical direction shall be permitted to respond to pre-hospital emergency medical incidents.

Hospital: Any facility located in the county licensed as a hospital in accordance with Chapter 395, Florida Statutes, and which operates a dedicated emergency department.

License: Any license or transfer of license issued by the department of health pursuant to Chapter 401, Florida Statutes.

Medical director: A board certified emergency physician who meets the requirements of the Florida Department of Health, Bureau of Emergency Medical Services and who provides clinical oversight, medical protocols and policy development, quality assurance and quality improvement services.

Operator: Any person engaged in business as the owner, proprietor, purchaser, or lessee of ambulances, emergency medical services vehicles, air ambulances, or other vehicles intended to be used for basic, advanced life support services or emergency transportation services in Leon County.

Paramedic: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Patient: An individual who is ill, sick, injured, wounded or otherwise incapacitated and is in need of or can be expected to need emergency medical care.

Permit: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Person: Any individual, firm, association, partnership, corporation, local government, or any other group, combination of individuals or entities acting as a unit.

Registered nurse: Shall have the same meaning as defined in F.S. § 401.23, as amended from time to time.

Rules and regulations: those specific requirements and guidelines which are promulgated and periodically revised by the board and codified in this article.

Vehicle: Includes aircraft, landcraft and watercraft.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-58. - Emergency medical services advisory council.

There is hereby created the Emergency Medical Services Advisory Council of Leon County (hereinafter referred to as "EMSAC"). Membership of the EMSAC shall consist of the county administrator or designee, who shall act as chairman of the EMSAC, the assistant county administrator or designee, the City Manager of the City of Tallahassee or designee, the Leon County EMS Medical Director, and the administrator, or designee, and emergency department medical director of each hospital. It shall be the duty of the EMSAC to make recommendations to the board and its administrative staff as to the significant needs, issues and opportunities relating to emergency medical services, including the provision of ambulance service in the county, and such other duties as may be prescribed under this article.

The EMSAC is hereby delegated the authority by the board to promulgate the rules and regulations necessary to carry out the provisions of this article. The EMS chief shall provide staff to the EMSAC.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-59. - Certificates required.

No person shall conduct, engage in, advertise for, or provide any of the services as described in this article unless a certificate of public convenience and necessity is first obtained from the board.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-60. - Classification of certificates.

Certificates shall be classified, and certificate holders shall operate in accordance with the classification of each service category as follows:

(1) *Advanced life support ground transport services certificate:* Holders of this certificate shall:

- a. Provide advanced life support services as defined under F.S. § 401.23 and 64E-2.003, Florida Administrative Code;
 - b. Maintain its vehicle(s) and operate its service program with the intention of providing both medical transport and ALS service, on a regular 24-hour per day, seven-day per week basis throughout the county;
 - c. Abide by standard operating medical procedures and protocols promulgated by the county EMS medical director;
 - d. Participate in EMS system quality assurance activities as directed by the county EMS medical director.
- (2) *Air ambulance service transport certificate:* Holders of this certificate shall:
- a. Provide air ambulance services, rotary wing or fixed wing, as defined by F.S. § 401.23, and 64E-2.005, Florida Administrative Code;
 - b. Abide by standard operating medical procedures and protocols as directed by the providers' EMS air ambulance medical directors or that of the county EMS medical director, whichever provides a higher level of patient care;
 - c. Participate in EMS system quality assurance activities as directed by the county EMS medical director.
- (3) *Basic life support transport services certificate:* Holders of this certificate shall:
- a. Provide basic life support services as defined under F.S. § 401.23 and 64E-2.002, Florida Administrative Code;
 - b. Abide by standard operating medical procedures and protocols promulgated by the county EMS medical director;
 - c. Participate in EMS system quality assurance activities as directed by county EMS medical director;
 - d. Maintain its vehicle(s) and operate its service program with the intention of providing both medical transport and BLS service on a regular 24-hour per day, 7-day per week basis throughout the county.
- (4) *Advanced life support non-transport services certificate:* Holders of this certificate shall:
- a. Provide advanced life support services as defined under F.S. § 401.23, and 64E-2.005, Florida Administrative Code, excluding transport requirements;
 - b. Abide by standard operating medical procedures and protocols promulgated by the county EMS medical director;
 - c. Participate in EMS system quality assurance activities as directed by the county EMS medical director.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-61. - Certificate application.

Every application for a certificate of public convenience and necessity under this article shall be in writing, signed and sworn by the applicant and shall be filed with the board. The application shall contain the following:

- (1) The name, age and address of the applicant and the length of time the applicant has resided in the county if the applicant is an individual; the business name of the partnership and the name, age and address of each partner and the length of time each partner has resided in the county if the application is a partnership; the names and residences of all officers and directors if the applicant is a corporation; the classification of the certificate of public convenience and necessity being applied for.
- (2) If the applicant is a corporation, the type and number of shares outstanding and the name and the addresses of shareholders.
- (3) The date of incorporation or formation of the entity.
- (4) A description of the services to be provided.

- (5) The addresses of the applicants present and proposed base station location and all sub-stations, including the methodology used to determine their locations as well as the process to be used to relocate/add substations in the future.
- (6) The names and certification numbers of all emergency medical technicians, paramedics, first responders, drivers or other attendants employed by or affiliated with the applicant.
- (7) The year, model, type, department permit number (when received by department), motor vehicle or FAA registration number and mileage of every ambulance, rescue vehicle or other type of transporting or responding vehicle used by the applicant.
- (8) Applicants desiring to provide ground transport must provide a written plan describing the procedures to replace vehicles at intervals of no greater than five years or 200,000 miles, whichever occurs first.
- (9) Applicants desiring to provide ground transport must provide a written plan describing the procedures to replace non-disposable medical equipment based on manufacturer standards.
- (10) Air ambulance providers must include a copy of their most recent operations manual and FAA Part 135 Certificate.
- (11) A description of the applicant(s) communication system, including its assigned frequency, call number, mobiles, portables, range and hospital communications ability.
- (12) A proposed operating budget for the purpose of demonstrating financial ability to perform and commitment to providing described services.
- (13) Verified proof that the applicant and its employees possess all required federal and state licenses and permits.
- (14) The name of the municipalities and the description of all geographic areas that the applicant has previously been authorized to serve, including Leon County, any other county in Florida, or any other state.
- (15) A list of current charges or a schedule of proposed charges for transportation and treatment of patients and a written statement of intent to notify the board in writing of any proposed future fee increase, including rationale for the increase.
- (16) A sworn statement signed by the applicant or his/her authorized representative stating that all the information provided by the applicant in the application is true and correct.
- (17) Pursuant to Rules 64E-2.002(4) and 64E-2.003(7), F.A.C., a list of medical equipment and supplies to be equipped and maintained in each emergency medical services vehicle.
- (18) A statement, policy, certificate, or irrevocable letter of commitment to insure, from an insurance company satisfactory to the board, shall be attached to the application, and shall specify coverages/limits for public liability, property damage and malpractice insurance as provided in this article or a surety bond conditioned for the payment and satisfaction of any final judgment as required by this article.
- (19) Compilation statement showing assets and liabilities prepared by a certified public accountant.
- (20) A copy of the applicant(s) management plan which shall include a copy of standard operating procedures.
- (21) Proof that the applicant has employed or contracted with a medical director qualified pursuant to F.S. § 401.265.
- (22) Any other information as may be reasonably required by the board.
- (23) The application fee except for renewals, shall be in the amount of \$5,000.00, except for the state, agencies of the state, and political subdivisions of the state, who shall not be required to submit such application fee.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-62. - Application review.

- (a) Within five days of receipt of an application for a certificate under this article and the appropriate fee, the board shall transmit a copy of the application to the following: The City of Tallahassee, the Tallahassee Fire Department, the Leon County Director of Emergency Management, the medical directors of emergency departments at all hospitals, existing ambulance services, and the EMSAC members. All recommendations on the application shall be forwarded to the

EMSAC within 30 days of receipt. The EMSAC shall then have 30 days in which to review the recommendations. Thereafter, the EMSAC shall submit its recommendation for granting (with or without limitations) or denying the certificate to the board. (b) The EMSAC shall, within the time prescribed in subsection (a) of this section, review the application and cause an investigation to be made of the character and reputation of the applicant. The EMSAC's investigation and review of the application shall include, but not be limited to the following:

- (1) The financial responsibility of the applicant to maintain safe, comfortable services, maintain or replace medical equipment, and maintain all insurance coverage required under this article.
- (2) The condition of the emergency medical services vehicles and equipment provided by the service.
- (3) The adequacy of the standard operating procedures of the applicant.
- (4) The past performance and service record of the applicant obtained from sources such as hospitals, nursing homes, local public safety agencies and the department of health.
- (5) The number and type of services and governmental entities currently providing emergency basic and advanced life support emergency medical services or air medical transportation services to the area, and the effect of the proposed services on the quality and cost of any existing medical transportation or rescue services.
- (6) The basis for determination of need may include, but shall not be limited to:
 - a. A computation of the ratio of estimated annual requests for service in the particular certificate category, to the current number of vehicles satisfying requests;
 - b. A computation of the ratio of vehicles per 1,000 population.
 - c. A benchmark comparison with other entities of similar size and geography providing emergency medical services.
- (7) The extent to which the applicant and all proposed equipment and personnel conform to the requirements of Chapter 401, Florida Statutes, any amendments thereto, and any rules promulgated thereunder.
- (8) Such other facts which the EMSAC may deem relevant in determining the fitness of the applicant to assume the occupation of an operator.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-63. - Issuance or refusal.

- (a) Within 30 days of receipt of the EMSAC's recommendation, the board shall review said recommendation and may uphold, amend or deny, in whole or in part, the recommendations of the EMSAC. Any substantive amendment made by the board shall be returned to the EMSAC for further review. If the board finds that the applicant meets the requirements for a particular classification of a certificate of public convenience and necessity, it may issue a certificate, subject to the limitations as the board deems necessary to protect the public health, safety and welfare. A certificate shall be valid for a period of three years and shall not be transferable or assignable without the prior written approval of the board.

(b) Every certificate issued under this article shall state:

- (1) The name of the service.
- (2) Certificate classification as specified in section 8-60 of this article.
- (3) Date of issuance and the date of expiration.
- (4) The minimum number of vehicles to be used by the applicant in the rendition of such services.
- (5) Such conditions and limitations as the board may deem necessary or proper in the public interest.
- (6) The signatures of the chairman of the board and the clerk of the courts.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-64. - Rights and duties granted by certification.

(a) *Advanced life support ground transport services certificate*: Acceptance of the advanced life support ground transport services certificate shall obligate the applicant to:

- (1) Provide continuous and uninterrupted emergency medical services to the extent authorized by the certificate.
- (2) Keep such records as may be required by the federal or state government or by the board and make such records available to the county administrator or his designee for inspection.
- (3) Promptly respond to every emergency call for ambulance service. Patients shall be loaded and transported without being subject to unreasonable delays and without regard to financial ability to pay. All emergency response times shall be kept by the operator, and a log reflecting such response time shall be made available to the EMSAC annually, or as otherwise requested by the EMSAC.
- (4) Operate a minimum number of advanced life support ambulances on immediate call at all times. The actual number of ambulances required to be maintained on "immediate call" shall be reviewed by the EMSAC and the actual numbers determined pursuant to the terms of subsection 8-62(b)(6).
- (5) Provide advance notice of any proposed rate changes to the EMSAC.
- (6) Complete an ambulance run report for all ambulance calls, noting the time, place of origin, destination requested by patient, actual destination, and identification of services (charge codes) for which charges are made, and such other operating and patient information as may be required by the EMSAC or Florida Department of Health Bureau of Emergency Medical Services, hereinafter BEMS. Every operator shall retain and preserve all daily run reports for at least five years, and such run reports shall be available for inspection by the EMSAC upon request. The EMSAC shall make an semi-annual review of said run reports for the year ending September 30 by no later than December 1 of each consecutive year and submit its report to the board; within 60 days thereafter.
- (7) Maintain liability insurance in such amounts and with such coverage as the board may require upon issuance of the certificate.
- (8) Operate in conformance with all federal and state laws and local ordinances.
- (9) File an application for renewal of its certificate at least 180 days prior to the date of expiration.
- (10) Notify the board in writing at least 180 days prior to the date of expiration in the event the operator determines that it will not file an application for renewal of its certificate.
- (11) Notify the board in writing, in the event the operator determines that it will no longer provide services authorized under its certificate, at least 180 days prior to the date the operator plans to cease providing services in the county.

- (b) *Air ambulance service transport certificate*: Acceptance of the air ambulance service transport certificate shall obligate the applicant to:
- (1) Provide continuous and uninterrupted emergency medical services to the extent authorized by the certificate.
 - (2) Keep such records as may be required by the federal or state government or by the board and make such records available to the county administrator or his designee for inspection.
 - (3) Promptly respond to every emergency call for air ambulance service. Patients shall be loaded and transported without being subject to unreasonable delays and without regard to financial ability to pay. All emergency response times shall be kept by the operator, and a log reflecting such response time shall be made available to the EMSAC annually, or as otherwise requested by the EMSAC.
 - (4) Provide advance notice of any proposed rate changes to the EMSAC.
 - (5) Complete an air ambulance run report for all air ambulance calls, noting the time, place of origin, destination requested by patient, actual destination, and identification of services (charge codes) for which charges are made, and such other operating and patient information as may be required by the EMSAC or BEMS. Every operator shall retain and preserve all air ambulance run reports for at least five years, and such run reports shall be available for inspection by the EMSAC upon request. The EMSAC shall make an semi-annual review of said run reports for the year ending September 30 by no later than December 1 of each consecutive year and submit its report to the board; within 60 days thereafter.
 - (6) Maintain liability insurance in such amounts and with such coverage as the board may require upon issuance of the certificate.
 - (7) Operate in conformance with all federal and state laws and local ordinances.
 - (8) File an application for renewal of its certificate at least 180 days prior to the date of expiration.
 - (9) Notify the board in writing at least 180 days prior to the date of expiration in the event the operator determines that it will not file an application for renewal of its certificate.
 - (10) Notify the board in writing, in the event the operator determines that it will no longer provide services authorized under its certificate, at least 180 days prior to the date the operator plans to cease providing services in the county.
- (c) *Basic life support services transport certificate*: Acceptance of the basic life support services transport certificate shall obligate the applicant to:
- (1) Provide continuous and uninterrupted services to the extent authorized by the certificate.
 - (2) Keep such records as may be required by the federal or state government or by the board and make such records available to the county administrator or his designee for inspection.
 - (3) Promptly respond to every call for service. All emergency response times shall be kept by the operator, and a log reflecting such response time shall be made available to the EMSAC annually, or as otherwise requested by the EMSAC.
 - (4) Complete a run report for all calls, noting the time, place and such other operating and patient information as may be required by the EMSAC. Every operator shall retain and preserve all daily run reports for at least five years, and such run reports shall be available for inspection by the EMSAC upon request.
 - (5) Maintain liability insurance in such amounts and with such coverage as the board may require upon issuance of the certificate.
 - (6) Operate in conformance with all federal and state laws and local ordinances.
 - (7) File an application for renewal of its certificate at least 180 days prior to the date of expiration.
 - (8) Notify the board in writing at least 180 days prior to the date of expiration in the event the operator determines that it will not file an application for renewal of its certificate.
 - (9) Notify the board in writing, in the event the operator determines that it will no longer provide services authorized under its certificate, at least 180 days prior to the date the operator plans to cease providing services in the county.

- (d) *Advanced life support non-transport services certificate*: Acceptance of the advanced life support services non-transport certificate shall obligate the applicant to:
- (1) Provide continuous and uninterrupted emergency medical services to the extent authorized by the certificate.
 - (2) Keep such records as may be required by the federal or state government or by the board and make such records available to the county administrator for inspection.
 - (3) Promptly respond to every call for service. All emergency response times shall be kept by the operator, and a log reflecting such response time shall be made available to the EMSAC annually, or as otherwise requested by the EMSAC.
 - (4) Complete an emergency run report for all calls, noting the time, place of origin, destination requested by patient, actual destination, and identification of services (charge codes) for which charges are made, and such other operating and patient information as may be required by the EMSAC or BEMS. Every operator shall retain and preserve all daily run reports for at least five years, and such run reports shall be available for inspection by the EMSAC upon request.
 - (5) Maintain liability insurance in such amounts and with such coverage as the Board may require upon issuance of the certificate.
 - (6) Operate in conformance with all federal and state laws and local ordinances.
 - (7) File an application for renewal of its certificate at least 180 days prior to the date of expiration.
 - (8) Notify the board in writing at least 180 days prior to the date of expiration in the event the operator determines that it will not file an application for renewal of its certificate.
 - (9) Notify the board in writing, in the event the operator determines that it will no longer provide services authorized under its certificate, at least 180 days prior to the date the operator plans to cease providing services in the county.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-65. - Certificate revocation, modification, suspension or affirmation.

Every certificate of public convenience and necessity issued pursuant to this article is subject to revocation, modification, or suspension by the board when it is found that:

- (1) The certificate holder has failed or neglected to render services as required by the certificate, this article, the rules and regulations promulgated hereunder, Chapter 401, Florida Statutes, or the Florida Administrative Code; or
- (2) The certificate holder or its agent has demanded money or other compensation in excess of that established in its schedule of charges filed with the EMSAC; or
- (3) The certificate holder has been convicted of a felony which involved conduct indicating the certificate holder to be of such character and capable of such conduct which fail to meet standards considered by the board to be appropriate in the licensed activity. In determining whether to recommend revocation, suspension or modification of the certificate, the council shall consider (1) the nature and seriousness of the felony, and (2) the circumstances under which the felony occurred; or
- (4) The certificate was obtained by an application in which any material fact was omitted or falsely stated; or
- (5) Such revocation, modification or suspension of the certificate, upon good cause shown, will best serve the public interest.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-66. - Investigative procedures.

- (a) All unresolved issues and complaints related to the services of a certificate holder shall be referred within five days of receipt of the complaint to the EMS chief for investigation. The EMS chief shall conduct an investigation and file a written report to the EMSAC within 60 days of receipt of the complaint.

- (b) The county administrator shall notify the certificate holder by certified mail of the EMSAC's recommendation within five days of receipt thereof. If the EMSAC determines that revocation, suspension or modification of a certificate is warranted, the notice to the certificate holder shall state the reasons for such findings and establish a hearing date. The hearing and final determination shall be held by the board.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-67. - Rules and regulations.

The board is hereby authorized to adopt such forms, rules, regulations and policies as may be necessary or proper to implement this article.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-68. - Transfer or assignment.

No certificate issued pursuant to this article shall be assignable or transferable by the person to whom it is issued, except upon approval by the board in the same manner and subject to the same application, investigation, fees and public hearings original applications for certificates. Any majority transfer of shares of stock or interest of any person or operator so as to cause a change in the directors, officers, majority shareholders or managers of such person or operator shall be deemed a transfer or assignment as contemplated in this article and subject to the same rules and regulations as any other transfer or assignment.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-69. - The City of Tallahassee not to require license, permit or payment of fees, except occupational license authorized by general or special law.

The City of Tallahassee shall not require any operator holding a certificate issued pursuant to this article to obtain any municipal license, certificate or permit, nor require the payment of any fees for the right to operate within said municipality, except an occupational license authorized by general or special law.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-70. - Article not applicable to government ambulances.

Nothing in this article is intended to apply to any ambulance which is owned or operated by any agency of the state or federal government.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-71. - Turning in a false alarm.

Whoever, without reasonable cause, by telephone or otherwise, summons any emergency medical services vehicle pursuant to this article or reports that such vehicle is needed when such person knows or has reason to know that the services of such vehicle are not needed, shall be guilty of violation of this article subject to punishment as provided herein.

(Ord. No. 04-09, § 1, 4-13-04)

Sec. 8-72. - Violations and penalties.

Violations of this article shall be subject to punishment as provided by F.S. § 125.69. Violators shall be prosecuted by the office of the state attorney in the same manner as misdemeanors are prosecuted. Each day or fraction thereof that a violation continues shall be considered a separate offense.

(Ord. No. 04-09, § 1, 4-13-04)



CERTIFICATE OF LIABILITY INSURANCE

 DATE (MM/DD/YYYY)
 06/10/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher Risk Management Services, Inc. 2850 Gold Road Rolling Meadows, IL 60008	CONTACT NAME: PHONE (A/C, No, Ext): 630-694-5473 FAX (A/C, No): 630-634-4634 E-MAIL: drew_becker@ajg.com ADDRESS:
INSURER(S) AFFORDING COVERAGE	
INSURER A : National Fire Marine Insurance	
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

COVERAGES	CERTIFICATE NUMBER:	REVISION NUMBER:
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THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC OTHER:						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY ☐						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	☐ UMBRELLA LIAB ☐ OCCUR ☒ EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☐ RETENTION \$			POLICY #EN016439	08/01/2018	08/01/2019	EACH OCCURRENCE \$ 25,000,000 AGGREGATE \$ 25,000,000 \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y / N	N / A				☐ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER
CANCELLATION

Tallahassee Memorial HealthCare, Inc. 1300 Miccosukee Road Tallahassee, FL 32308	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
--	---

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CERTIFICATE OF LIABILITY INSURANCE

 DATE (MM/DD/YYYY)
 06/10/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher Risk Management Services, Inc. 2850 Gold Road Rolling Meadows, IL 60008	CONTACT NAME: PHONE (A/C, No, Ext): 630-694-5473 FAX (A/C, No): 630-634-4634 E-MAIL: drew_becker@ajg.com ADDRESS:
INSURER(S) AFFORDING COVERAGE	
INSURER A: National Fire Marine Insurance	
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

COVERAGES	CERTIFICATE NUMBER:	REVISION NUMBER:
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THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC OTHER:						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY ☐						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB ☐ OCCUR ☒ EXCESS LIAB ☐ CLAIMS-MADE DED RETENTION \$			POLICY #EN016439	08/01/2018	08/01/2019	EACH OCCURRENCE \$ 25,000,000 AGGREGATE \$ 25,000,000 \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A				PER STATUTE OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER
CANCELLATION

EVIDENCE OF INSURANCE

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For TALLAHASSEE MEMORIAL HEALTHCARE, INC.
d/b/a TALLAHASSEE MEMORIAL HOSPITAL

SELF INSURED RETENTION (SIR)

ISSUE DATE: 8/1/2018 – 8/1/2019

CERTIFICATE HOLDER: Tallahassee Memorial Hospital d/b/a Tallahassee Memorial Hospital
And its employees and employed physicians

THIS SELF INSURED RETENTION (SIR) LISTED BELOW IS MAINTAINED FOR ALL TALLAHASSEE MEMORIAL HOSPITAL EMPLOYEES AND EMPLOYED PHYSICIANS FOR THE POLICY PERIOD INDICATED NOTWITHSTANDING ANY REQUIREMENT, TERM, OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE SELF INSURANCE RETENTION DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF THE RETENTION.

LIMIT OF LIABILITY:

Each Incident: Inclusive of Costs \$3,000,000.00

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A handwritten signature in blue ink, reading "Judy S. Davis".

Judy S. Davis, MS, LHRM, CHRM
Director/Corporate Risk Manager

ACORD™

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

6/07/2019

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PRODUCER J Smith Lanier Tallahassee 1500 Mahan Drive, Suite 111 Tallahassee, FL 32308 850 877-8181	CONTACT NAME: PHONE (A/C, No, Ext): - FAX (A/C, No): E-MAIL ADDRESS: INSURER(S) AFFORDING COVERAGE INSURER A : Markel Insurance Company NAIC # 38970
INSURED Tallahassee Memorial HealthCare, Inc. 1300 Miccosukee Road Tallahassee, FL 32308	INSURER B : INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES

CERTIFICATE NUMBER:

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	COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC OTHER:						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
A	AUTOMOBILE LIABILITY ☒ ANY AUTO OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☒ HIRED AUTOS ONLY ☒ NON-OWNED AUTOS ONLY			MTA7000096006	05/01/2019	05/01/2020	COMBINED SINGLE LIMIT (Ea accident) \$5,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB ☐ OCCUR EXCESS LIAB ☐ CLAIMS-MADE DED RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ Y / N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N / A				PER STATUTE ☐ OTH-ER ☐ E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

CANCELLATION

Tallahassee Memorial Healthcare, Inc.
1300 Miccosukee Rd
Tallahassee, FL 32308

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AUTHORIZED REPRESENTATIVE



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II

Adult Prehospital Protocols

January 2018




**Tallahassee Memorial
Hospital**
Tallahassee Memorial HealthCare

Tallahassee Memorial Emergency Medical Services

Tallahassee Memorial Emergency Medical Services Adult Prehospital Protocol Manual 2018

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INTRODUCTION

The purpose of protocols and procedures for Tallahassee Memorial Hospital EMS is to establish guidelines between EMS administration, the EMS provider and medical director for the management, treatment, and transport of specific medical emergencies.

Pursuant to the Florida Administrative Code 64J-1.004(4)(a). The Medical Director responsibilities include developing medically correct standing orders or protocols which permit specified ALS and BLS procedures when communication cannot be established with a supervising physician or when any delay in patient care would potentially threaten the life or health of the patient.

Authorization for EMS personnel to provide pre-hospital medical care comes directly from the State approved Medical Director.

Tallahassee Memorial EMS providers are authorized to perform only pursuant to the written or verbal authorization of the department's medical director or medical control. We will measure up to the high standard required of emergency medical services only by, working together, and maintaining a high degree of professionalism.

The protocols set forth are not designed nor intended to limit the EMS provider in the exercise of good judgment or initiative in taking reasonable action in extraordinary circumstances. These protocols are intended to assist in achieving excellent, consistent prehospital care for patients. These protocols have been developed using the currently accepted standards of care, Leon County Medical Protocols, and *The American Heart Association 2017 Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care*,

The following protocols are not intended to provide a solution to every problem which may arise. Prehospital care is a shared responsibility between the medical director, physician medical control, and the EMS provider. All EMS personnel are required to use the protocols appropriate to their certification and training level.

Colby Redfield, M.D.
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January 6, 2018

Reviewed & Revised: July 1, 2009
Reviewed: November 1, 2010
Reviewed & Revised: March 1, 2016
Reviewed & Revised: February 23, 2017
Reviewed & Revised: January 6, 2018



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2. ADULT MEDICAL PROTOCOLS



2.1 Adult Initial Assessment & Management

Overview: Protocols in Section 2.1 are designed to guide the EMT or paramedic in his or her initial approach to assessment and management of adult patients. Supportive Care is specified as EMT and Paramedic (BLS) and Paramedic Only (ALS).

Protocol 2.1.1 should be used on all adult patients for initial assessment. During this assessment, if the EMT or paramedic determines that there is a need for airway management, Protocol 2.1.2 should be used for the management of the adult airway. These protocols are frequently referred to by other protocols, which may or may not override them in recommending more specific therapy.

Protocol 2.1.3 presents the basic components of preparation for transport of medical patients. Due to the significant differences in priorities and packaging in the pre-hospital care of trauma and hypovolemia cases, a separate Trauma Supportive Care protocol has been developed. After following Protocol 2.1.1, this Medical Supportive Care protocol may be the only protocol used in medical emergency situations where a specific diagnostic impression and choice of additional protocol(s) cannot be made. Judgment must be used in determining whether patients require ALS or BLS level care. This protocol is frequently referred to by other protocols, which may or may not override it in recommending more specific therapy.

Protocol 2.1.4 presents the basic components of preparation for transport of trauma patients. Due to the significant differences in priorities and packaging in the pre-hospital care of medical cases, a separate Medical Supportive Care protocol has been developed. After following Protocol 2.1.1, this Trauma Supportive Care protocol may be the only protocol used in trauma or hypovolemia situations where a specific diagnostic impression and choice of additional protocol(s) cannot be made. Judgment must be used in determining whether patients require ALS or BLS level care. This protocol is frequently referred to by other protocols, which may or may not override it in recommending more specific therapy.

Protocol 2.1.5 should be used by paramedics ONLY for pain management.



2.1.1 Initial Assessment Protocol: EMT and Paramedic

Purpose: This will be the initial protocol followed by EMTs and Paramedics on all calls you are dispatched to (or that you roll up on).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. Scene size up.

- a. Review of dispatch information
- b. Assess need of body substance isolation
- c. Assessment of scene safety
- d. Determine mechanism of injury
- e. Determine location of patients
- f. Determine need for additional resources

2. Initial assessment.

- a. General impression of patient
- b. Assess mental status (AVPU) – Maintain spinal immobilization PRN.
 - i. **A** = alert
 - ii. **V** = responsive to verbal stimuli
 - iii. **P** = responsive to painful stimuli
 - iv. **U** = unresponsive
- c. Assess Airway
- d. Assess Breathing.
- e. Assess Circulation- Pulse, Major Bleeding, Skin color and temperature.
- f. Assess Disability- Movement of extremities/Defibrillate VF/VT without pulse
- g. Expose and Examine Head, Neck, Chest, Abdomen, and Pelvis (check back when patient is rolled on side).
- h. Identify Priority Patients

3. Initial Management

- a. [Airway Management \(2.1.2\)](#) Protocol/C-spine stabilization p.r.n.
- b. [Medical Supportive Care \(2.1.3\)](#) and/or [Trauma Supportive Care \(2.1.4\)](#) Protocols

4. Secondary Assessment

- a. Conduct a head-to-toe survey
- b. Neurological Assessment
 - 1) Pupillary response
 - 2) Glasgow Coma score
- c. Assess Vital Signs
 - 1) Respirations
 - 2) Pulse
 - 3) Blood Pressure
 - 4) Skin Condition
 - Color
 - Temperature



- Moisture
- 5) Lung Sounds
- d. Obtain a Medical History
 - 1) **S** – Symptoms, Chief Complaint
 - a. O- Onset and Location
 - b. P – Provocation
 - c. Q – Quality
 - d. R-Radiation
 - e. R- Referred
 - f. R- Relief
 - g. S- Severity
 - h. T-Time
 - 2) **A** – Allergies
 - 3) **M** – Medications
 - 4) **P** – Past Medical History
 - 5) **L** – Last Oral Intake
 - 6) **E** – Events leading to illness or injury
- e. Refer to specific medical/trauma protocols for continued management
- 5. **Other assessment techniques to be used as the situation warrants:**
 - a. Cardiac Monitoring (EMT can connect patient to monitor while paramedic performing other task)
 - b. Pulse Oximetry
 - c. Glucose Determination
 - d. Monitor Core Temperature
 - e. Capnography



2.1.2 Airway Assessment/Management Protocol

Purpose: Airway assessment and management is the most important and first order of business when patient contact is made (immediate removal from unsafe scene may on occasion trump airway management). An algorithm for general airway assessment/management provides a general overview and road map for the EMT/Paramedic to follow if needed. This algorithm will in turn direct the EMT/Paramedic to either a Non-breathing Airway Protocol or a Breathing Patient Airway Protocol. If a decision is made to intubate a patient, follow the Universal Airway Algorithm. Once the airway is controlled/secured, attention can be given to the other medical/trauma problems and care directed according to the appropriate protocol. **New 2010 ACLS guidelines recommend titrating oxygen delivery to maintain pulse ox at >94%.**

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Assessment Protocol 2.1.1](#)
2. Monitor breathing during transport
3. Administer oxygen via nasal cannula (2-6 L/min) to maintain pulse ox $\geq$ 94%
4. If spontaneous breathing is compromised:
 - a. Maintain airway (e.g. modified jaw thrust)
 - b. Administer oxygen to maintain pulse ox $\geq$ 94% via nasal cannula (2-4 L/min), simple mask (4-6 L/min) or non-rebreather mask (10-15 L/min)
 - c. If unconscious, insert oropharyngeal or nasopharyngeal airway PRN (If patient accepts oropharyngeal airway, paramedic should consider need for intubation (ALS Level I))
 - d. Assist ventilations with BVM PRN
5. Suction PRN
6. Monitor pulse oximetry and capnography, as soon as possible
7. If spontaneous breathing is absent or markedly compromised:
 - a. Maintain airway (e.g. modified jaw thrust)
 - b. If unconscious, insert oropharyngeal or nasopharyngeal
 - c. Assist ventilations with BVM
 - d. Suction PRN
 - e. If unconscious and intubation is not available, insert [King Airway](#) (or other approved blind intubation device) (a).
 - f. Monitor pulse ox and capnography or ETCO₂ monitoring device, as soon as possible

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider CPAP if severe distress and patient able to cooperate with use of CPAP. See [CPAP Protocol](#)
2. If indicated, perform endotracheal intubation (stabilize C-spine prn).
 - a. Confirm ETT placement by three methods and document
3. Secure ETT with commercial device
 - a. Apply cervical collar for additional security.



4. Attach end-tidal CO₂ monitoring device
5. Monitor SpO₂ with pulse oximeter.
6. If unable to intubate and patient cannot be adequately ventilated by any other means, perform a cricothyroidotomy ([see Surg Cric Protocol](#) or [Needle Cric Protocol](#)) and transport rapidly to the hospital. (b)

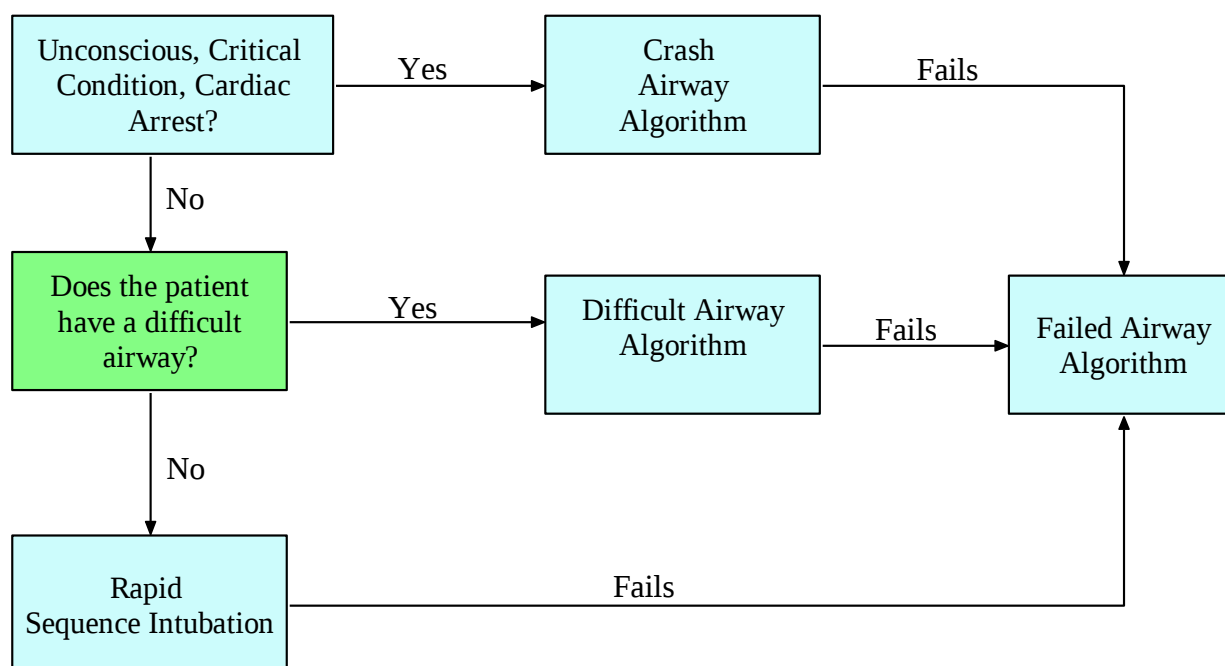
ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for questions or concerns.

NOTE:

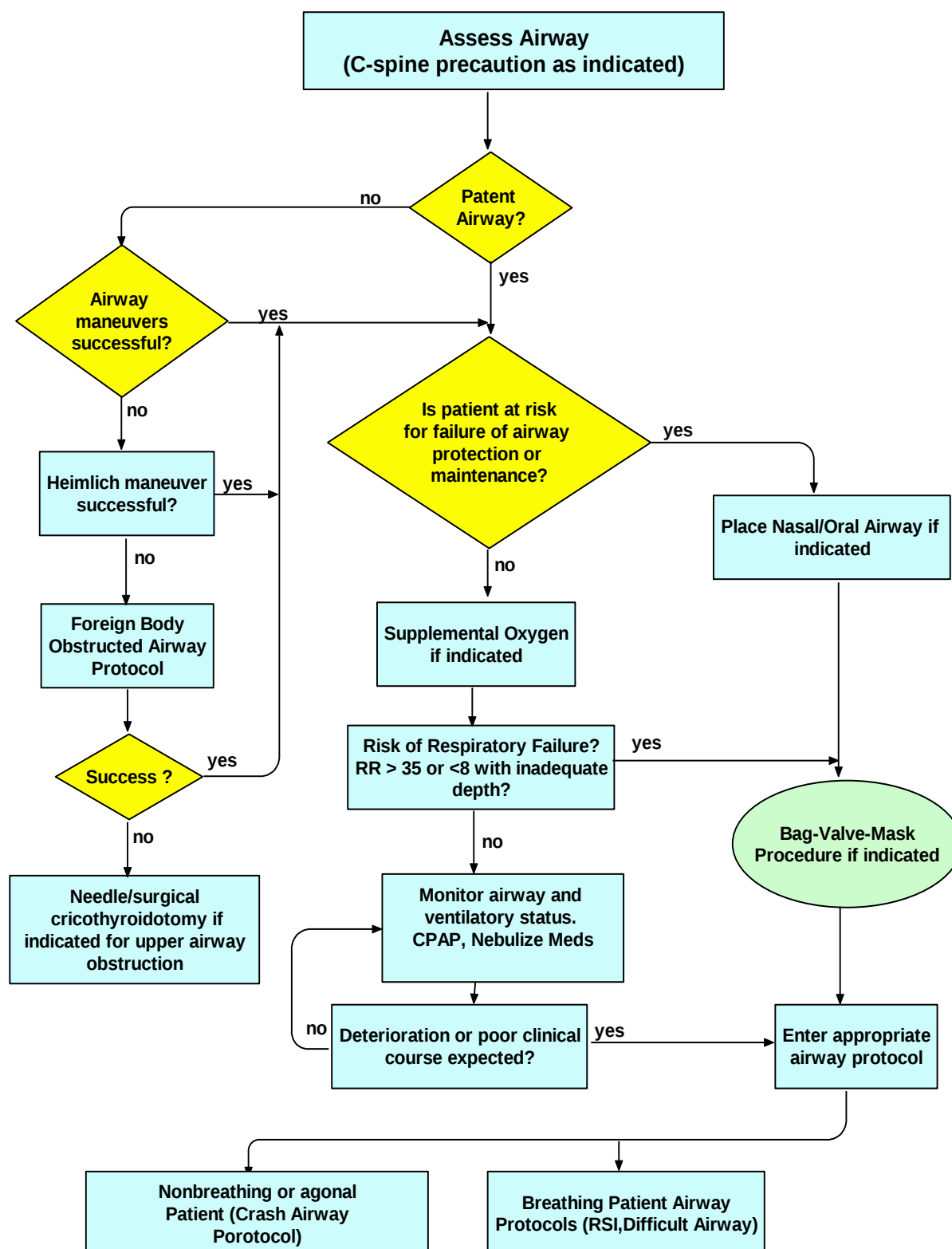
- (a) An individual medical director may authorize other airway devices for use.
- (b) Once decision to intubate has been made, follow Universal Airway Algorithm on all intubations (see [Smart Airway Management Protocol](#) for more algorithms and direction)

Universal Airway Algorithm



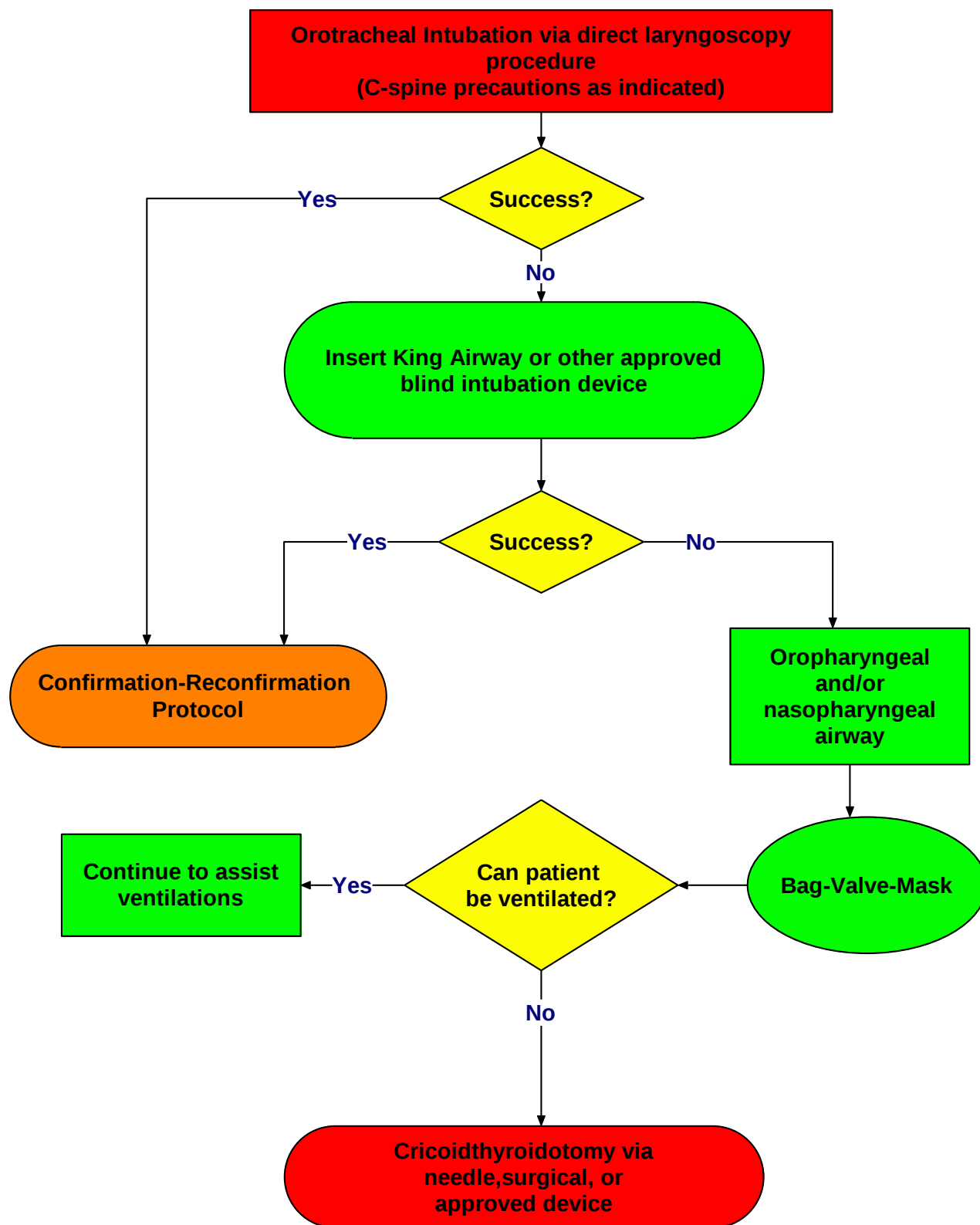


Adult Airway Assessment



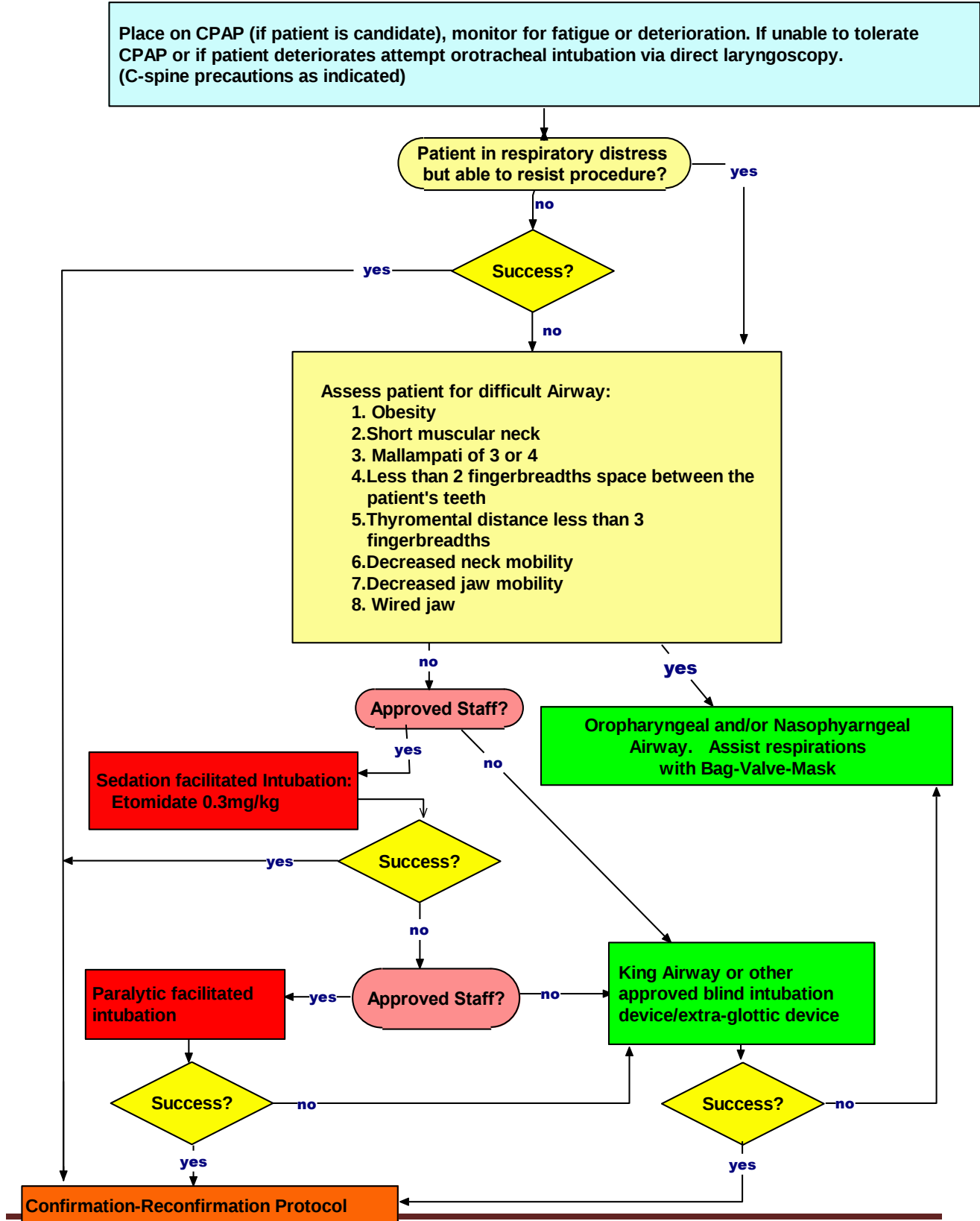


Airway Assessment Protocol: Non-Breathing Patient



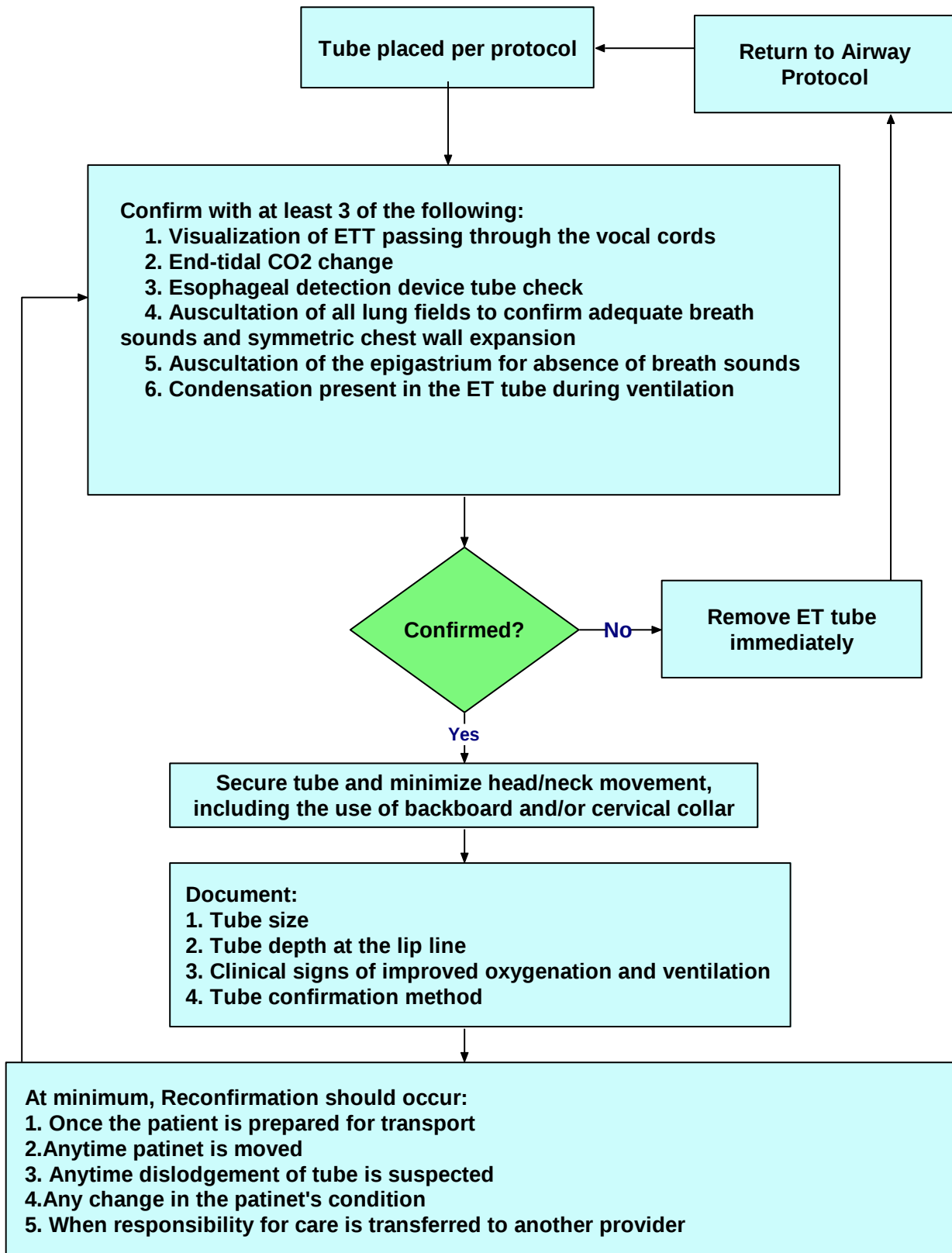


Airway Assessment Protocol: Breathing Patient





Airway Confirmation-Reconfirmation Protocol:



Adult Protocols





2.1.3 Medical Supportive Care

Purpose: This protocol is used in conjunction with the Initial patient Assessment Protocol 2.1.1.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial assessment protocol 2.1.1](#)
2. If spontaneous breathing present without compromise:
 - a. Monitor breathing during transport
 - b. Administer oxygen via nasal cannula (2-6 L/min) PRN to maintain pulse ox $\geq 94\%$.
3. If spontaneous breathing is present with compromise
 - a. Maintain airway (e.g. modified jaw thrust)
 - b. Administer oxygen via non-rebreather mask (10-15 L/min).
 - c. In unconscious, insert oropharyngeal or nasopharyngeal airway PRN.
 - d. Assist ventilations with BVM PRN
 - e. Suction PRN
 - f. Monitor pulse oximetry and capnography, as soon as possible
 - g. Paramedic only: If patient accepts oropharyngeal airway, consider need for intubation (see ALS Level 1- advanced airway below)
4. If spontaneous breathing is absent or markedly compromised:
 - a. Maintain airway (e.g. modified jaw thrust)
 - b. If unconscious, insert oropharyngeal airway
 - c. Assist ventilations with BVM
 - d. Suction PRN
 - e. If unconscious and intubation is not available, insert [King Airway](#) (or other approved blind intubation device) as per protocol.
 - f. Monitor pulse oximetry and capnography or [ETCO₂ monitoring](#) device as soon as possible

ALS LEVEL 1: PARAMEDIC ONLY

1. Perform endotracheal intubation and document the following:
 - a. Confirm ETT placement via three methods
 - b. Secure ETT with commercial device
 - 1) Full spinal immobilization is recommended
 - c. Attach end-tidal CO₂ monitoring device
 - d. Monitor SpO₂ with pulse oximeter
2. If unable to intubate and patient cannot be adequately ventilated by other means, perform cricothyroidotomy (see [Surgical Cric Protocol 4.37](#) or [Needle Cric Procedure](#))

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.



2.1.4 Trauma Supportive Care

Purpose: This protocol is used in conjunction with the Initial Assessment Protocol 2.1.1.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Assessment Protocol 2.1.1](#), Initiate “Trauma Alert” if applicable
2. [Airway Management Protocol 2.1.2](#).
3. Correct any open wound/sucking chest wound (occlusive dressing)
4. Control hemorrhage
5. Immobilize C-spine (if unable to clear in field) and secure patient to backboard per protocol 4.35 [Spinal Immobilization/Spinal Immobilization Clearance](#)
6. Expedite transport
7. The following steps should not delay transport:
 - a. Complete bandaging, splinting and packaging PRN
 - b. Establish hospital contact for notification of incoming patient and for the Paramedic to obtain consultation for level 2 orders

ALS LEVEL 1: PARAMEDIC ONLY

1. Correct any massive flail segment that causes respiratory compromise (intubate)
2. Correct any tension pneumothorax with needle decompression as per [Needle Decompression](#) protocol
3. Establish IV of Normal Saline with regular infusion set unless overridden by other specific protocol.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.



2.1.5 Pain (GENERAL) Management

Purpose: This protocol is to be used for managing pain in patients with the following conditions:

- Isolated Extremity Fracture
- **Acute** back strain
- Renal colic (kidney stone)
- Soft tissue injuries, burns, bites and stings.
- Discomfort related to attached devices or inserted tubes such as a foley catheter, NG tube, chest tube, etc. This will apply to intra-facility transfers.

Do not use this protocol if there is multisystem trauma or hemodynamic instability. Keep in mind that severe back pain can sometimes be indicative of a condition that may require emergency surgery such as appendicitis, ruptured or dissecting aneurysm, ruptured ectopic pregnancy, etc. Be sure you do a good abdominal exam on patients complaining of back pain. If any abdominal tenderness is found, do not give pain med until advised by medical control or medical director. If patient has severe enough back pain that you are considering giving pain medication for, be sure the history is consistent with back strain, e.g. lifting heavy material and felt a pull. **DO NOT USE TORADOL ON ANY PATIENT THAT MAY REMOTELY BE GOING TO SURGERY**, e.g. fractured extremities, serious soft tissue injuries. If you're not sure, call med control for advice. Kidney stone patients may report a history of kidney stones and may or may not have hematuria (blood in urine). Use caution in the elderly with "kidney stone" pain, as this is how aneurysm problems can present. Always monitor respiratory status and pulse ox after administration of a narcotic. Intervene as needed to keep pulse ox $\geq 95\%$

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated, Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq 94\%$ (non-rebreather @15 LPM if SpO₂ < 91%).
3. Attach cardiac monitor and pulse oximeter if indicated

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 100ml/hr.
2. If pain is from an isolated extremity injury or from discomfort related to attached devices or inserted tubes:
 - a. Assess for circulation compromise (note color, swelling, sensation, palpable pulses)
 - b. Reposition for comfort, reassess for circulatory compromise
 - c. If extremity wrapped in a dressing, consider (per med control) removing dressing to assess for cause of pain
 - d. Elevate affected extremity if edematous
 - e. If extremity has obvious deformity and is not splinted, splint it.
 - f. If pain from attached device or inserted tube, be sure they are functioning properly.

Adult Protocols



- g. If pain persist despite above, proceed as below
- 3. If systolic BP > 90 mm Hg give one of the following over several minutes:
 - a. **Toradol 30 mg IV or 60 mg IM** (if patient is > 65 y/o limit dosage to 15mg IV or 30mg IM). After 30 minutes, the IV dose can be repeated x 1 PRN.
 - b. **Fentanyl 50 – 100 mcg IV or IM**. For doses beyond 100 mcg (when given for pain control), you will need written MD order or contact medical control.
 - c. **Morphine 2 – 10 mg IV or IM** (give in 2 mg increments) or PR. For doses beyond 10 mg, you will need written MD order or contact medical control
 - d. **Dilaudid 1 – 2 mg IV or IM** (not all service areas carry this drug). For doses beyond 2 mg, will need written MD order or contact medical control.
- 4. If nausea also present from pain or the pain medication give one of the following;
 - a. **Zofran 4 – 8 mg IV or IM**
 - b. **Benadryl 25-50 mg IV or IM**

ALS LEVEL 2: MEDICAL CONTROL

- 1. Contact medical control or medical director if any concerns or any questions.



2.2

Adult Respiratory Emergencies



2.2.1 Airway Obstruction

Purpose: This protocol is to guide you in management of a patient with an airway obstruction. Causes of upper airway obstruction include the tongue, foreign bodies, swelling of the upper airway due to angio-neurotic edema (from allergic reaction) and trauma to the airway. Differentiation of the cause of the upper airway obstruction is essential to determining the proper treatment.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2](#) Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox at $\geq 94\%$ (non-rebreather @15 LPM if $SpO_2 < 90\%$).
3. If air exchange is inadequate and there is a reasonable suspicion of foreign body airway obstruction (FBAO) (see [FBAO protocol](#)), apply abdominal thrust (chest thrust if pregnant or obese). If air exchange is adequate with a partial airway obstruction, do not interfere and encourage patient to cough up obstruction. Continue to monitor for adequacy of air exchange. If air exchange becomes inadequate continue with protocol.
4. Attach cardiac monitor and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. If unable to relieve FBAO, visualize with laryngoscope and extract foreign body with McGill forceps.
2. If obstruction is due to trauma and/or edema, or if uncontrollable bleeding into the airway causes life-threatening ventilatory impairment, perform endotracheal intubation.
3. If unable to intubate and patient cannot be adequately ventilated by other means, perform Cricothyroidotomy (see procedure [Needle Cric](#) or [Surgical Cric](#))

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.



2.2.2 Asthma/Bronchospasm

Purpose: This protocol is used for patients who are complaining of dyspnea and who are wheezing. Whenever possible, allow these patients to assume whatever position is comfortable (they may not tolerate laying flat). A patient with a history of CHF that has wheezing on auscultation of lung sounds should not be automatically classified as an “asthma patient”. If the CHF patient does not have a history of asthma or allergic reaction, the more prudent assessment would be that of CHF (cardiac asthma) (See [CHF/Pulmonary Edema protocol](#))

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#) Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox at $\geq 94\%$ (non-rebreather @15 LPM if $SpO_2 < 90\%$).
3. Attach cardiac monitor and pulse oximeter.
4. Transport to designated hospital.

ALS LEVEL 1: PARAMEDIC ONLY

1. If severe distress consider CPAP with in-line nebulized medication may or may not help (keep in mind, it is the medications that will work best to break the bronchospasm)
2. Administer [Albuterol \(Ventolin\)](#) 2.5mg (in 2.5 ml normal saline) by nebulizer. May repeat twice PRN. DO NOT GIVE ALBUTEROL OR IPRATROPIUM BROMIDE IF THE HEART RATE IS > 140
3. May add [Ipratropium Bromide \(Atrovent\)](#) 0.5 mg (0.5ml) to the first Albuterol neb only.
4. If indicated, start IV of Lactated Ringer's or Normal Saline at TKO
5. For persistent respiratory distress, give [Methylprednisolone Sodium Succinate \(Solu-Medrol\)](#) 125mg IV.
6. For severe dyspnea, [Epinephrine \(1:1000\)](#) 0.4 ml IM Adult (Peds: 0.01 ml/kg.) Caution should be used with administration of Epinephrine when the patient has a history of hypertension or heart disease (call med control if you have any concerns)
7. Consider need for endotracheal intubation

ALS LEVEL 2: MEDICAL CONTROL

1. Repeat [Epinephrine \(1:1000\)](#) 0.4 mg IM
2. If patient still has dyspnea after SubQ Epi, 3 Albuterol nebs (first with Atrovent), and Solu-Medrol, medical control may order [Magnesium Sulfate](#) 2 gms IV (mixed with 50ml of D5W given over 10 – 15 minutes)



2.2.3 COPD / Dyspnea

Purpose: This protocol is used for patients with a history of emphysema and/or chronic bronchitis that complain of dyspnea. If at any point, the patient's respiratory status deteriorates, consider CPAP or endotracheal intubation and administration of Albuterol via the ET tube as a mist, and transport immediately. See [Oxygen Tolerance in COPD](#) in Appendix

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox at $\geq 94\%$ (non-rebreather @15 LPM if $SpO_2 < 90\%$).
3. Attach cardiac monitor and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. If patient is in moderate to severe distress and is still alert and cooperative, **consider CPAP** (with in-line nebulized medication) per [CPAP Protocol](#) .
2. Administer [Albuterol](#) 2.5 mg in 2.5ml of normal saline and [Atrovent \(Ipratropium\)](#) 0.5mg via nebulized breathing treatment.
3. Repeat [Albuterol](#) (only) every 15 minutes as needed x 3 doses total. Discontinue therapy if patient develops marked tachycardia (HR > 140) or chest pain.
4. If signs of severe hypoventilation despite CPAP and/or Nebulized bronchodilators: (See [Airway Assessment Protocol, 2.1.2](#))
 - a. Assist ventilations with BVM with 100% oxygen.
 - b. Consider endotracheal intubation
5. Initiate IV lactated Ringer's or normal saline TKO.
6. For persistent respiratory distress, give [Methylprednisolone Sodium Succinate \(Solu-Medrol\)](#) 125 mg IV. (NOTE: If patient already on a steroid, **give 80 mg of [Solu-Medrol IV](#)**).

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.
2. Consider (per med control) [Valium](#) 2-5 mg or [Versed](#) 2-4 mg IVP for anxiety, however patient may then need to be intubated.



2.2.4 Pulmonary Edema /CHF (Congestive Heart Failure)

Purpose: This protocol is used for patients who are exhibiting signs/symptoms of pulmonary edema – CHF including: tachypnea, orthopnea, JVD, edema, dyspnea with rales and/or wheezing (cardiac asthma). The patient may also have diminished air exchange. In severe case, patient may be pursed lip breathing. Other treatment for the causes of pulmonary edema-CHF should be considered (e.g. supraventricular tachycardia, myocardial infarction and cardiogenic shock). A patient with a history of CHF that has wheezing on auscultation of lung sounds should not be automatically classified as an “asthma patient”. The paramedic must remember that patients with CHF may also present with wheezing. If the CHF patient does not have a history of asthma or allergic reaction, the more prudent assessment would be that of CHF (cardiac asthma).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol.2.1.2](#). Put patient in position of comfort. Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox at $\geq 94\%$ (non-rebreather @15 LPM if $SpO_2 < 90\%$).
3. Attach cardiac monitor and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. Administer CPAP (if available). Titrate to 10cm of pressure (see [CPAP Protocol](#))
2. If patient's respiratory status deteriorates (fatigues, does not respond to CPAP, obvious persistent distress), assist ventilations with BVM with 100% oxygen and consider endotracheal intubation. If patient has end-stage disease and has previously expressed to family (verbally or in writing) he/she does not want to be intubated, and then continue assisting with BVM or CPAP.
3. Initiate IV lactated Ringer's or Normal Saline TKO.
4. If systolic BP > 100 mm Hg; give [Nitroglycerine](#) 0.4mg sublingual (spray or tablet) followed by [Nitroglycerin paste](#) 1 inch to chest wall. Avoid if patient used Viagra, Cialis, Levitra or other ED drugs. (May repeat sublingual Nitro every 3 minutes up to 3 doses total if patient is hypertensive or has chest pain).
5. Do 12 Lead EKG. Transmit if abnormal and time permits

ALS LEVEL 2: MEDICAL CONTROL

1. [Lasix](#) 40-80 mg IV.
2. Consider [Morphine Sulfate](#) slow IV in 2mg increments titrate to systolic BP > 100 (or signs of respiratory depression) up to 10 mgs. Carefully monitor blood pressure and respirations. Be prepared to reverse with [Narcan](#) if needed.
3. Contact medical control or medical director for any concerns or questions.



2.2.5 Pneumonia (SUSPECTED)

Purpose: Patients complaining of dyspnea should be suspected of having pneumonia when they present with fever, productive cough, and possible pleuritic chest pain, history of being bedridden, known immune-compromise, diabetes, elderly and lung sounds indicative of consolidation (rales and/or rhonchi with egophony over area of consolidation).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox at $\geq 94\%$ (non-rebreather @15 LPM if $SpO_2 < 90\%$).
3. Attach cardiac monitor and pulse oximeter
4. Check temperature if able

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider CPAP (per [CPAP protocol](#)) for severe dyspnea/air hunger. It may or may not help but will not harm.
2. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
3. If dyspnea noted, administer [Albuterol](#) 2.5 mg in 2.5ml of normal saline and [Atrovent \(Ipratropium\)](#) 0.5mg via nebulized breathing treatment. Do not give if HR ≥ 140
4. Repeat [Albuterol](#) (only) every 15 minutes as needed x 3 doses total. Discontinue therapy if patient develops marked tachycardia (HR > 140) or chest pain.
5. If signs of severe hypoventilation despite CPAP and/or Nebulized bronchodilators: (See [Airway Assessment Protocol 2.1.2](#))
 - a. Assist ventilations with BVM with 100% oxygen.
 - b. Consider endotracheal intubation
6. AVOID USE OF DIURETICS!!

ALS LEVEL 2: MEDICAL CONTROL

1. Notify medical control or medical director for any problems or concerns.

Adult Protocols



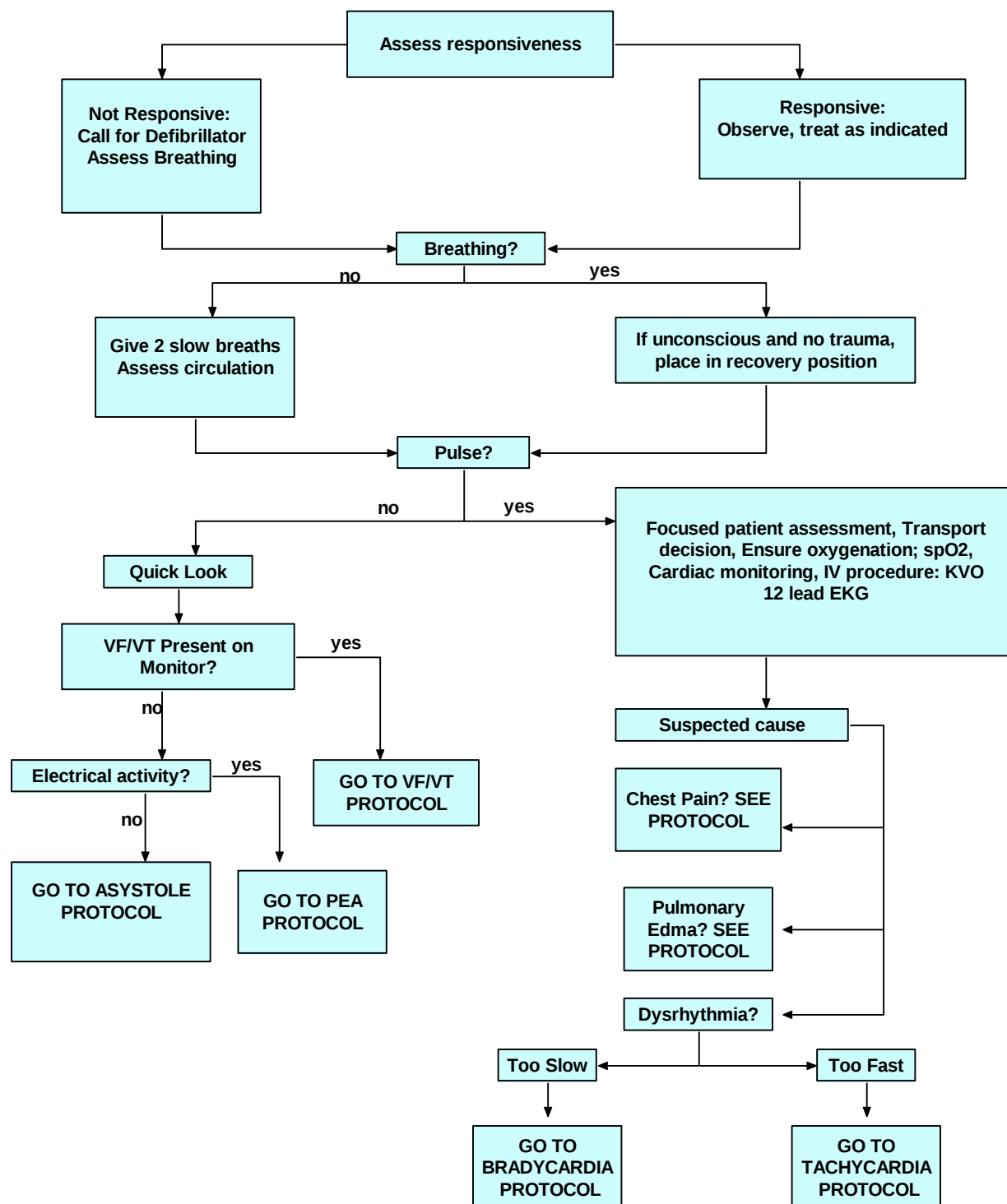


2.3

Adult Cardiac Dysrhythmias



2.3 CARDIAC CARE: UNIVERSAL ALGORITHM





2.3.1 Cardiac Dysrhythmias: ASYSTOLE

Purpose: Use this protocol for patients who are in asystole on the cardiac monitor.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2.](#)
3. Initiate BLS/CPR as indicated
4. Attach cardiac monitor and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. Intubate or Insert [King Airway](#) (or other extra glottic device) at once
2. Establish IV of Lactated Ringers or Normal Saline via Peripheral IV Site or Intraosseous site. Bolus with 250 ml then 100cc/hr. Bolus may be repeated up to one liter.
3. Confirm asystole in more than one lead.
4. Administer [Epinephrine](#) (1:10,000) 1mg every 3-5 minutes IV or IO. Follow each intravenous drug bolus with 20 milliliters of IV fluid and elevate extremity. One dose of [Vasopressin](#) 40 units IV/IO may be substituted for either the first or second dose of epinephrine
5. If unable to establish IV or IO access, administer Epinephrine at twice the IV dose (maximum 0.1mg/kg) endotracheal.
6. For prolonged down time or known pre-existing metabolic acidosis give [Sodium Bicarb](#) (8.4%) 1mEq/kg IV or IO
7. If Return of Spontaneous Circulation (ROSC) and patient remains unconscious, begin [Induced Hypothermia Protocol](#)
8. Consider possible causes:

Possible cause:

Treatment:

Hypoxia	Oxygenate and Ventilate
Hyperkalemia (increased potassium)	NaHCO₃, CaCl
Hypokalemia (decreased potassium)	ABCs and transport
Pre-existing Acidosis	NaHCO₃
Drug overdose	Narcan,
Hypothermia	Re-warming

9. In the event that a patient who presents in asystole remains in asystole after 10 minutes of ACLS, including an advanced airway, IV/IO access, and at least two doses of Epinephrine, you may **discontinue** resuscitation efforts. (Refer to administrative section [Resuscitation Considerations](#) for further information on discontinuation procedures) Be sure to note the time of death in the PCR.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any further directions or questions.



2.3.2 Cardiac Dysrhythmias: BRADYCARDIA

Purpose: This protocol is to be used for patients with heart rates < 60 per minute and any of the following signs and symptoms:

- Chest pain
- Shortness of breath
- Decreased level of consciousness
- Low blood pressure (< 90 mm Hg)
- Shock
- Pulmonary edema
- Congestive heart failure
- Acute MI or acute ischemia on 12 lead EKG
- Ventricular escape beats

If patient is asymptomatic, do not treat unless ordered to do so by medical control. Bradycardia with hypotension may be due to inferior wall MI associated with right ventricular infarction (confirmed by 12 lead EKG V4R ST Elevation). When an inferior wall MI is associated with right ventricular MI, avoid use of nitrates (Nitroglycerin). If bradycardia and hypotension exists, pacing and IV fluids may improve the patient's hemodynamic status.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient/Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#)
3. [Attach cardiac monitor and pulse oximeter.](#)

ALS LEVEL 1: PARAMEDIC ONLY

1. Start IV or IO of lactated Ringer's or normal saline TKO. Bolus with 250ml increments up to 1 liter as needed for hypotension. Check vitals and breathe sounds between each bolus.
2. Perform [12 lead EKG](#) (transmit to hospital if capable). If inferior wall MI is identified, perform additional 12 lead EKG with V4R to confirm/rule out concurrent right ventricular MI
3. IF no inferior wall MI, administer [Atropine](#) 0.5 mg IV or IO. May repeat IV or IO [Atropine](#) every 3-5 minutes up to:
 - 2 mg for patients weighing less than 110 pounds (<50 kg)
 - 3 mg for patients weighing 110-165 pounds (50-75 kg)
 - 4 mg for patients weighing 165-220 pounds (75-100 kg)
4. Pace with external pacer per [External Cardiac Pacing protocol](#).
5. IV fluid bolus 250ml increments up to 1 liter with vital sign and lung exam between each bolus
6. For 2nd degree AV block type II and 3rd degree AV block, omit Atropine and go to [External Cardiac Pacing protocol](#).
7. If patient is conscious and aware of situation during pacing, administer one of the following benzodiazepines:
 - a. [Diazepam \(Valium\)](#) 5mg IV or IO, may repeat once PRN (up to max of 10 mg).

Adult Protocols



- b. Midazolam (Versed) 2mg IV or IO, may repeat once PRN (up to max. 4 mg).

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.
2. Consider Glucagon 1-2 mg IV x 1 if on Beta Blockers
3. Consider Calcium Chloride 1-2 gms IV over 10 min if on Calcium Channel Blockers



2.3.3 Cardiac Dysrhythmias: STABLE NARROW COMPLEX TACHYCARDIA- PSVT (JUNCTIONAL OR ATRIAL TACH)

Purpose: Patients suffering from tachycardia may or may not exhibit symptoms. It is important to note that narrow complex tachycardia has many origins. The atrial rate may be helpful in differential interpretation of these types of tachycardia. The following rates should be considered:

- Sinus Tachycardia ranges from 100 - 160 per minute
- Junctional tachycardia ranges from 100 - 180 per minute
- Atrial tachycardia ranges from 150 - 250 per minute Atrial flutter ranges from 250 – 350 per minute
- Atrial fibrillation starts at 350 per minute (atrial rate)

In addition, wide complex tachycardia (QRS $\geq$ 0.12 seconds) should initially be considered as ventricular in origin, unless proven otherwise (e.g. documented QRS morphology consistent with pre-existing BBB).

Procedure:

PSVT (JUNCTIONAL OR ATRIAL TACHYCARDIA) AND HR $\geq$ 150/MIN

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient/Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol.2.1.2](#)
3. Attach cardiac monitor (Verify narrow complex tachycardia. If wide-complex tachycardia, see Ventricular Tachycardia Protocol) and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. Start IV of lactated Ringer's or normal saline TKO.
2. Attempt vagal maneuvers (see procedure: [Vagal Maneuver Protocol](#)) if not contraindicated (have patient do a Valsalva maneuver).
3. If above fails or is contraindicated and the patient is not in A-fib or Aflutter, place patient in supine position and give [Adenosine Triphosphate \(Adenocard\)](#) 6mg rapid IVP followed by 20ml of NS flush
4. If, after 1-2 minutes, no response noted, administer [Adenosine](#) 12 mg IV push over 1-3 seconds, followed by 20ml of NS flush.

ALS LEVEL 2: MEDICAL CONTROL

1. Administer ONE of the following antiarrhythmic drugs:
 - a. [Verapamil](#) 2.5 – 5 mg over 2 minutes. May repeat 5 – 10 mg after 15 – 30 minutes. Max dose 20 mg.
 - b. [Diltiazem \(Cardizem\)](#) 0.25mg/kg IV (over 2 minutes) (20mg for average patient) for narrow complex SVT. Do not use if patient has history of WPW. May repeat dose at 0.35mg/kg IV over two minutes (25mg for the average patient)
 - c. [Amiodarone](#) 150mg in 50ml of D5W over 10 minutes if available. May repeat x 1 in no response to the first dose.



2.3.4 Cardiac Dysrhythmias: NARROW COMPLEX TACHYCARDIA- STABLE A-FIB OR A-FLUTTER

Purpose: This protocol is for patients who are in an **atrial fibrillation** or **atrial flutter** rhythm and considered stable (BP > 90 mm Hg, no chest pain, no dyspnea or diaphoresis). The ventricular rate in a-fib will be irregular and the p-waves may not be discernable. P-waves in a-flutter may have a saw tooth appearance and a rapid +/- regular ventricular rhythm. Adenocard generally does not work on A-fib/a-flutter. If HR $\geq$ 150 proceed with protocol.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient/Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2](#)
3. Attach cardiac monitor (Verify narrow complex tachycardia. If wide-complex tachycardia, see [Ventricular Tachycardia Protocol](#)) and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. Start IV of lactated Ringer's or normal saline TKO. Bolus as needed with 250mls of IV fluid. Repeat as needed up to 1 liter. Check vital signs
2. Administer one of the following anti-arrhythmic drugs: Do not use if patient has history of WPW.
 - a. [Diltiazem \(Cardizem\)](#) 0.25mg/kg IV (over 2 minutes) (20mg for average patient) for narrow complex SVT. May repeat dose at 0.35mg/kg IV over two minutes (25mg for the average patient).
 - b. [Verapamil](#) 2.5 – 5 mg over 2 minutes. May repeat 5 – 10 mg IV after 15– 30 minutes. Max dose 20 mg.

ALS LEVEL 2: MEDICAL CONTROL

1. [Amiodarone](#) 150mg in 50ml of D5W over 10 minutes if available. May repeat x 1 if no response to the first dose.
2. Contact medical control or medical director for any questions or problems.



2.3.5 Cardiac Dysrhythmias: **UNSTABLE NARROW COMPLEX TACHYCARDIAS** Adult Medial Protocol

Purpose: This protocol is used for patients considered to be unstable with narrow complex tachycardia. Consider patient to be unstable and prepare for immediate cardioversion if patient exhibits any of the following signs or symptoms:

- Crushing chest pain, diaphoresis, heart rate ≥ 150
- Significant Shortness of breath
- Decreased level of consciousness
- Low blood pressure / shock (sys ≤ 90 mm Hg)
- Pulmonary edema / congestive heart failure
- Acute MI

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient/Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2](#)
3. Attach cardiac monitor (Verify narrow complex tachycardia. If wide-complex tachycardia, see [Ventricular Tachycardia Protocol \[w/pulse\]](#) or [V-Fib and V-tach w/o pulse](#)) and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. **NOTE: If the rhythm is a rapid atrial fibrillation and onset of a-fib has been greater than 48 hours, contact medical control for assistance with medication vs cardioversion! If ordered to cardiovert, proceed. All other unstable tachyarrhythmias proceed as below.**
2. Start IV of lactated Ringer's or normal saline TKO. Bolus as needed with 250mls of IV fluid for systolic BP < 90 mm Hg. Repeat as needed up to 1 liter. Check vital signs
3. If patient is conscious and aware of situation, sedate with one of the following benzodiazepines:
 - a. [Midazolam \(Versed\)](#) 2mg IV, may repeat once PRN (up to max. 4mg.)
 - b. [Diazepam \(Valium\)](#) 5mg IV, may repeat once PRN (up to max. of 10 mg).
4. [Synchronized cardioversion](#), start at:
 - a. **50 joules for a-flutter** (if no response try 100 then 200 joules)
 - b. **100 joules for a-fib and PSVT** (if no response try 200 then 300 joules)

ALS LEVEL 2: MEDICAL CONTROL

1. Overdrive pacing (see procedure: [External Cardiac Pacing protocols](#))
2. Contact medical control or medical director for any questions or problems.



2.3.6 Cardiac Dysrhythmias: PREMATURE VENTRICULAR ECTOPY (PVC'S)

Purpose: Treatment of ventricular arrhythmias after MI has been a controversial topic for two decades. Similarly, management of ventricular arrhythmias during the acute phase of MI continues to evolve as treatment strategies are reviewed in the context of new information and changing epidemiological data during the era of adjunctive medical and reperfusion therapy. At present, the treatment of asymptomatic premature ventricular ectopy (PVC's) is not recommended. If patient exhibits any of the following signs or symptoms: (Chest pain, Dizziness, Symptoms of acute MI), and premature contractions are malignant (>6/min, multi-focal, occurring in couplets, exhibiting "R on T phenomenon", exhibiting runs of V-tach), follow this protocol.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient/Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2](#)
3. Attach cardiac monitor

ALS LEVEL 1: PARAMEDIC ONLY

1. Start IV of lactated Ringer's or normal saline TKO. Bolus as needed with 250mls of IV fluid. Repeat as needed up to 1 liter. Check vital signs
2. [Lidocaine](#) 1 – 1.5 mg/kg IV push (reduce dose by 50% if patient over the age of 70 or has known liver disease)
3. If, after 5 minutes, PVCs persist, repeat [Lidocaine](#) at ½ the initial dose. If PVCs are suppressed, begin [Lidocaine drip](#) at 2mg/min.
4. If PVCs do not respond to Lidocaine, give [Procainamide](#) at 30mg/min to a maximum of 17mg/kg.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems



2.3.7 Cardiac Dysrhythmias: PULSELESS ECLECTICAL ACTIVITY (PEA)

Purpose: This protocol is used for: electromechanical dissociation (EMD), pseudo-EMD, idioventricular rhythms, bradysystolic rhythms, and post-defibrillation idioventricular rhythms.

The most frequent cause of PEA includes:

Hypovolemia	Tablets (drug OD, accidents)
Hypoxia	Tamponade, cardiac
Hydrogen Ion- Acidosis	Tension pneumothorax
Hyper-/Hypokalemia	Thrombosis, coronary (ACS)
Hypothermia	Thrombosis, pulmonary (PE)

Treatment should be given with respect to the identifiable cause and therefore, may not reflect the sequence suggested below.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient/Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2](#)
3. Attach cardiac monitor
4. CPR as indicated

ALS LEVEL 1: PARAMEDIC ONLY

1. Start IV or IO of lactated Ringer's or normal saline and give initial bolus in 250ml increments of IV fluid up to 1 liter. Check vital signs and lung sounds between boluses. Repeat as needed with second liter.
2. [Epinephrine](#) (1:10,000) 1mg IV or IO and repeat every 3-5 minutes for duration of pulselessness. Can give via ETT at twice IV dose if no access. One dose of [Vasopressin](#) 40 units IV/IO may be substituted for either the first or second dose of epinephrine.
3. Consider cause and possible treatment options (see specific protocols).
4. For prolonged down time or known pre-existing metabolic acidosis, [Sodium Bicarbonate](#) (8.4%) 1mg/kg IV or IO
5. If patient taking calcium channel blocker, give [Calcium Chloride 10%](#) 1gm or 10ml IV or IO
6. If Return of Spontaneous Circulation (ROSC) and patient remains unconscious, begin [Induce Hypothermia Protocol](#)

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.



2.3.8 Cardiac Dysrhythmias: WIDE COMPLEX TACHYCARDIA WITH PULSE (V-TACH WITH PULSE)

Purpose: This protocol is for patients with V-tach and a pulse. If patient is stable (good vitals, no chest pain), treat with medication as per STABLE PATIENT below. If Unstable (systolic BP < 90 mm Hg, chest pain, dyspnea, CHF, altered mental status) treat with cardioversion per UNSTABLE PATIENT BELOW.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient/Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2](#)
3. Attach cardiac monitor

ALS LEVEL 1: PARAMEDIC ONLY

FOR STABLE PATIENT:

1. Start IV or IO of lactated Ringer's or normal saline TKO. Bolus as needed in 250ml increments of IV fluid up to 1 liter. Repeat as needed with second liter. Check vital signs and lung sounds between boluses
2. Administer ONE of the following antiarrhythmics:
 - a. If you are unsure if the wide complex tachycardia is V-tach vs an SVT with aberrancy; NOTE: 2010 ALS Guidelines allow for [Adenosine \(Adenocard\)](#) in the initial diagnosis and treatment of stable, undifferentiated REGULAR, monomorphic wide-complex tachycardia (DO NOT USE FOR IRREGULAR WIDE COMPLEX TACHY). If it is clearly V-tach, proceed as follows.
 - b. [Amiodarone](#) 150mg in 50ml of D5W over 10 minutes IV or IO. May repeat every 10 minutes to maximum dose of 2 gm.
OR if Amiodarone unavailable
 - c. [Lidocaine](#) 1 – 1.5 mg/kg IV or IO. Repeat every 3 minutes at half initial dose (0.5 – 0.75 mg/kg) to a maximum total dose of 3mg/kg PRN. If Lidocaine converts rhythm, start [Lidocaine maintenance infusion](#) @ 2 – 4 mg/min. Drip based on total bolus dose given. IF:
 - 1mg/kg = 2mg/min
 - 1.5 - 2mg/kg = 3mg/min
 - 2.5 - 3mg/kg = 4mg/min
 - Reduce infusion by 50% for patients over age of 70 with CHF or liver disease.

OR

- d. [Procainamide](#) 30mg/min., to maximum dose of 17 mg/kg. If Procainamide converts rhythm, start [Procainamide maintenance infusion](#) @ 1 – 4 mg/min (Reduce maintenance infusion by 50% for patients with kidney disease). Ending point for Procainamide administration includes:
 - Dysrhythmia is suppressed
 - 17mg/kg total loading dose

Adult Protocols



- QRS widens by 50% of original width
- Systolic BP drops 10 mm Hg or more

3. Use only one antiarrhythmic medication. If patient does not convert with maximum dose, treat as unstable ([synchronized cardiovert](#)).

FOR UNSTABLE PATIENT: (systolic BP < 90 mm Hg, chest pain, dyspnea, CHF, altered mental status).

1. Start IV or IO of lactated Ringer's or normal saline TKO. Bolus as needed for systolic BP < 90 mm Hg in 250ml increments of IV fluid up to 1 liter. Repeat as needed with second liter. Check vital signs between boluses
2. If patient is conscious and aware of situation, sedate with one of the following benzodiazepines:
 - a. [Midazolam \(Versed\)](#) 2mg IV, may repeat once PRN (up to max. 4mg.)
 - b. [Diazepam \(Valium\)](#) 5mg IV, may repeat once PRN (up to max. of 10 mg).
3. Synchronized cardioversion @ 100, 200, 300, 360 joules if monomorphic V-tach. If polymorphic V-tach, treat as V-fib. If unsure if rhythm is polymorphic or monomorphic and patient is unstable, deliver unsynchronized defibrillation shock (200 joules)
4. If patient converts rhythm, give [Amiodarone](#) 150mg in 50ml of D5W over 10 minutes IV or IO. May repeat every 10 minutes to maximum dose of 2 gm. Or [Lidocaine](#) 1 - 1.5 mg/kg IV.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.



2.3.7 Cardiac Dysrhythmias: V-FIBRILLATION and/or PULSELESS V-TACH

Purpose: Use this protocol for patients in V-Fib and V-Tach with no pulse. Changes in ACLS treatment of cardiac arrest have been designed to minimize interruptions in chest compressions for rhythm check, pulse check, and ACLS therapies. To minimize interruptions in chest compressions, the team leader should plan interventions such as rhythm check, insertion of an airway, and even drug administration around uninterrupted periods of CPR. There is much less emphasis on drug therapy during cardiac arrest and much more emphasis on CPR with minimal interruptions in chest compressions.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient/Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2](#)
3. Attach cardiac monitor
4. Early CPR

ALS LEVEL 1: PARAMEDIC ONLY

1. Verify the patient is in V-fib (check for loose electrodes). Do CPR while defibrillator is charging!
2. **If a shock CAN** be delivered within 4 minutes of the onset of V-fib/pulseless V-Tach (onset occurs in presence of EMS), then give one shock at 200 joules (biphasic defibrillator) followed immediately by two minutes of CPR (5 cycles of 30:2 compressions: breaths) before checking for a pulse and assessing the rhythm on the monitor.
If a shock CAN NOT be delivered within 4 minutes of onset of V-fib/pulseless V-tach, or if it is unknown how long patient has been in V-fib/pulseless V-tach at the time of patient contact, do 5 cycles (about 2 minutes) of CPR BEFORE delivering the first shock at 200 joules, immediately followed by two more minutes (5 cycles [30:2]) of CPR before checking for pulse and analyzing the rhythm.
3. Analyze rhythm/check pulse; if still in V-fib/pulseless V-tach, resume CPR, and perform the following actions with minimal interruptions in CPR.
4. [Endotracheal Intubation](#) or [King Airway](#) (or other blind insertion device). If an advanced airway is inserted, rescuers should no longer deliver “cycles” of CPR. Chest compressions should be delivered continuously (100 per minute) and rescue breaths delivered at a rate of 8 to 10 breaths per minute (1 breath every 6 to 8 seconds).
5. Establish IV or IO with Normal Saline or Lactated Ringers at KVO.
6. If establishing the IV/IO and administering the drug(s) cannot be done during the 5 cycles (or two minutes) of CPR prior to the second shock, give the second shock (if shockable rhythm), then immediately do

Adult Protocols



another 5 cycles (or two minutes) of CPR and continue working on getting the IV/IO established and the drugs administered.

7. Give one of the following drugs (drugs should be administered during uninterrupted CPR after the first or second shock):
 - a. **Epinephrine (1:10,000) 1 mg** IV or IO (if no access, give via ETT at twice the IV dose, max 0.1mg/kg). May repeat every 3 – 5 minutes for duration of pulselessness.
 - b. **Vasopressin 40 units** IV or IO. After 10 minutes (following administration of **Vasopressin**), administer **Epinephrine** as above.
8. Continue the sequence, escalating the shocks IF the monitor is capable:
 - a. CPR (5 cycles of 30:2 ratio or two minutes)→ Rhythm check/Charge (✓) defibrillator to 200 joules (while checking rhythm) → shock → CPR (5 cycles of 30:2 ratio or two minutes) → Rhythm check/✓ defib to 300 joules (→ shock → CPR.....3rd shock would be 360 joules
 - b. All subsequent shocks at 360 joules.

NOTE: Drugs may be administered during the CPR that is performed while the defibrillator is charging, or during the CPR performed immediately after the shock is delivered.

9. Continue defibrillating at appropriate escalating dose during the appropriate time in the sequence after each medication is administered for the duration of the VF or VT without pulse
10. Continue with **Epinephrine** as above but also give (if V-fib/pulseless V-tach persist)
 - a. **Amiodarone 300mg** IV or IO (rapid IV push if pulseless/no BP, otherwise dilute in 50 ml of D5W and give over 10 minutes to decrease risk of hypotension). May repeat once at 150 mg in 3 – 5 minutes. If successfully converted after bolus, administer Amiodarone drip at 1mg/min. Mix 100mg Amiodarone in 100ml of D5W and administer at rate of 15gtts/min

OR if Amiodarone not available

- b. **Lidocaine 1 - 1.5 mg/kg** IV or IO, repeat in 3 – 5 minutes to maximum dose of 3 mg/kg. If Lidocaine converts rhythm, start **Lidocaine maintenance infusion** @ 2 – 4 mg/min. Drip based on total bolus dose given. IF:
 - 1mg/kg = 2mg/min
 - 1.5 – 2mg/kg = 3mg/min
 - 2.5 – 3mg/kg = 4mg/min
 - Reduce infusion by 50% for patients over age of 70 with CHF or liver disease.

OR

Adult Protocols



c. **Procainamide 30 mg/min** to maximum of 17mg/kg IV or IO.

If Procainamide converts rhythm, start **Procainamide maintenance infusion @ 1 – 4 mg/min** (Reduce maintenance infusion by 50% for patients with kidney disease). Mix 100mg (1ml) in 100ml of D5W or NS and administer 15 – 60 gtts/min with a microdrip. Ending point of Procainamide administration includes:

- Dysrhythmia is suppressed
- 17mg/kg total loading dose
- QRS widens by 50% of original width
- Systolic BP drops 10 mm Hg or more

11. Give 1 – 2 amps of **Sodium Bicarb (8.4%) 1mEq/kg IV or IO** if V-fib/pulseless V-tach is refractory to above meds and prolonged down time.
12. If Torsades de Pointes: give **Magnesium Sulfate 1– 2 gms IV or IO** (dilute in 100ml D5W) over 1 – 2 minutes. If magnesium converts rhythm, start **Magnesium Sulfate maintenance infusion** (1 gm in 250 D5W) @ 30 – 60 gtts/min
13. If Return of Spontaneous Circulation (ROSC) and patient remains unconscious, begin **Induce Hypothermia Protocol**

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.



2.4

Other Adult Cardiac Emergencies



2.4.1 Cardiogenic Shock

Purpose: This protocol is to be used for a patient that is hypotensive (systolic BP < 90 mm Hg) with signs and/or symptoms that are cardiac in origin, e.g. Pulmonary Edema-CHF (dyspnea with rales and/or wheezing), suspected acute myocardial infarction (ST segment elevations on EKG, severe substernal chest pain). If cardiogenic shock is suspected, medical control will need to help guide you in management. The treatment options will need to take into account medications that affect the contractile force of the heart, as well as pre-load and after-load concerns.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2.](#)
3. Attach cardiac monitor and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or normal saline **TKO**.
2. If patient is short of breath with signs of pulmonary edema (dyspnea, wheezing, rales, tachypnea)
 - a. Assist ventilations with BVM with 100% oxygen.
OR
 - b. Apply [CPAP](#) Mask if patient awake enough and able to tolerate
OR
 - c. Consider [endotracheal intubation](#).
3. If hypotensive:
 - a. Be sure to remove any transdermal nitroglycerine patch and inform medical staff that you have done so.
4. Obtain 12 lead EKG and transmit if capable.
5. Treat dysrhythmias per the appropriate protocol.
6. Further treatment based on evidence of fluid overload or no fluid overload.

ALS LEVEL 2: MEDICAL CONTROL

- a. If hypotensive **WITH** evidence of fluid overload (peripheral edema and/or lung sounds with rales):
 - i. Start [Dopamine](#) infusion @ 5-20 mcg/kg/min (1600 mcg/ml infusion concentration = 15 – 16 gtt/min). Titrate to maintain a minimum systolic BP of 90 mm Hg with good capillary refill or a maximum BP of 120 mm Hg (maximum dose 20 mcg/kg/min)
- b. If hypotensive and **WITHOUT** evidence of fluid overload (lung sounds are clear (no rales) and/or NO peripheral edema):
 - i. Administer 250 mL IV fluid bolus prn x 4, reassess vitals between boluses. If patient becomes dyspneic or redevelops pulmonary edema (dyspnea, wheezing, rales), do not give any further boluses
- c. Contact medical control or medical director for further orders as needed.



2.4.2 Chest Pain-Suspected Acute MI-Acute Coronary Syndrome

Purpose: This protocol is used for patients experiencing chest pain or discomfort **suspicious** for cardiac cause. Pain may be described as dull, aching, squeezing, fullness, band-like sensation, tightness, and sensation of someone or something sitting on chest. The pain may or may not radiate to the neck, jaw, left shoulder or down left arm. The patient can also have the following symptoms with or without chest pain; diaphoresis, nausea, short of breath, feel a sense of doom, weak, fatigued. Treat patients for possible cardiac cause of pain IF:

- Age ≥ 30 (or if < 30 with personal history of coronary artery disease)
- History of: HTN, Smoking, morbid obesity, Diabetes, Positive Family history of cardiac issues (when family member was same age as patient at onset of problem), hypercholesterolemia, cocaine use
- Anyone with abnormal/suspicious findings on the cardiac monitor, proceed with the following;

All other chest pain patients less than 30 yrs of age do not need to be treated with nitroglycerine and aspirin. If you have any doubt, contact medical control for guidance. Consider other causes in young patients such as musculoskeletal strain, respiratory (bronchitis, pneumonia, bronchospasm), trauma, GI (reflux, gall stones), etc.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2](#) Oxygen via nasal canula @ 4 LPM if $SpO_2 < 94\%$ (use non-rebreather @15 LPM if $SpO_2 < 90\%$)
3. Attach cardiac monitor and pulse oximeter.
4. BLS Crews can assist patients in taking their own home meds such as aspirin or sublingual nitroglycerine (see medical procedure protocols).
5. Place in position of comfort

ALS LEVEL 1: PARAMEDIC ONLY

1. Obtain (and transmit if capable) [12 lead EKG](#) as soon as possible. Notify medical control of any findings suggestive of acute myocardial infarction or other grossly abnormal tracing. For all arrhythmias identified, refer to the appropriate protocol. If ACUTE MI IS IDENTIFIED, NOTIFY THE APPROPRIATE RECEIVING FACILITY AND CALL A "CODE STEMI". If inferior wall MI is identified, perform additional 12 lead EKG with V4R to confirm/rule out concurrent right ventricular MI. (a).
2. Initiate an IV of lactated Ringer's or normal saline at a TKO rate. May require IV Bolus if hypotensive (systolic BP < 90 mm Hg). Give boluses in 250ml increments with vital sign and breath sound recheck in-between each bolus. Establish 2 IVs if possible.
3. Administer 1 [Aspirin tablet \(325 mg\)](#) PO or chew 4 Baby Aspirin if patient not allergic to Aspirin and does not have ulcer disease and has not taken a 325 mg dose within the past 24 hours.

Adult Protocols



4. Administer 1 **Nitroglycerin tablet or spray (0.4mg)** sublingually if systolic blood pressure greater than 90 mm Hg (avoid if HR < 50/min, or HR > 150/min). May be repeated every 5 minutes until:
 - a. 3 tablets have been administered,
 - b. Pain is relieved, or,
 - c. Systolic blood pressure falls below 100 mm Hg.

NOTE: DO NOT GIVE NITRO IF PATIENT HAS TAKEN Viagra, Cialis, Levitra or any other medication for erectile dysfunction in past 24-48 hours.
5. If pain was relieved to 0/10 by sublingual nitro, place 1 inch of **nitroglycerine paste** to chest wall (monitor blood pressure).
6. If pain continues and patient is not hypotensive (systolic BP < 90 mm Hg), administer **Morphine Sulfate** **slow IV in 2mg** increments every 3-5 minutes titrated to pain and BP > 90 mm Hg, up to maximum of 10 mg. Monitor respirations and blood pressure closely.
7. If patient becomes nauseated, give one of the following:
 - a. **Zofran** 4 – 8 mg IVP or IM
 - b. **Benadryl** 25-50 mg IVP
8. Minimize venipunctures.
9. IF time permits and transporting to a non cardiac cath facility (do not delay treatment or transport), perform **Fibrinolytic screening checklist** (see forms). This may prevent a delay if hospital will be giving thrombolytics in the event cardiac catheterization is not immediately available.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control for further orders as needed.

NOTE:

- (a) Bradycardia with hypotension may be due to inferior wall MI associated with right ventricular MI (confirmed on 12 lead EKG -V4R ST elevation). When an inferior MI is associated with right ventricular MI, **avoid use of nitrates (Nitroglycerin)**. If bradycardia and hypotension exists, pacing and IV fluids may improve the patient's hemodynamic status
- (b) Other causes of non-traumatic chest pain include: angina pectoris, dissecting aortic aneurysm, pericarditis, spontaneous pneumothorax, pulmonary embolism, pneumonia, pleurisy, costochondritis, hiatal hernia, esophageal spasm, peptic ulcer, cholecystitis, pancreatitis, and cervical disk problem. The paramedic will not always be able to differentiate the cause of a patient's chest pain. It is imperative for the paramedic to obtain a good history and perform a good physical exam including a chest exam/ breath sounds, abdominal exam and evaluation of peripheral pulses, as well as monitor cardiac activity and vital signs in order to identify those patients who are hemodynamically unstable.



Chest Pain Protocol Checklist

- ☐ Assure ABC's.
- ☐ Administer oxygen via nasal cannula or non-re-breather, titrate to SpO₂ >94%.
- ☐ Obtain symptom duration, time of onset or last time patient was seen normal.
- ☐ Obtain 12 lead EKG and transmit as soon as possible (if capable).
- ☐ Notify medical control of any findings that indicate MI or other abnormalities.
- ☐ Place patient in position of comfort.
- ☐ Pulse ox.
- ☐ Vital signs.
- ☐ Initiate intravenous line. Establish two if possible.
- ☐ Determine serum glucose level if history of diabetes or Altered Mental Status.
- ☐ Administer 1 Nitro tablet (0.4mg) sublingually if systolic pressure greater than 100 mm Hg. (Do not give Nitro if patient has had Viagra or similar medication in the past 24-48 hours.
- ☐ Repeat Nitro till pain relieved, 3 tablets administered, or systolic pressure drops below 100 mm Hg.
- ☐ 1 inch of Nitro Paste to chest wall if pain is relieved.
- ☐ Administer 4 baby aspirin or 1 325mg tablet if patient is not allergic or have ulcers.
- ☐ Treat dysrhythmias per protocol.
- ☐ Consider Morphine 2 mg IVP and every 3-5 minutes up to 10mg.
- ☐ Consider Zofran 4-8 mg IVP or IM for nausea.
- ☐ Transport. Document all items on run report.



FIBRINOLYTIC INCLUSION/EXCLUSION CHECKLIST:

Patient Name: _____ Date: _____

Inclusion Criteria	YES	NO
1. Patient $\geq$ 18 years old		
2. Ischemic discomfort $\geq$ 30 min. but not $>$ 12 hours		
3. ST segment $>$ 1mm in $\geq$ 2 contiguous leads or ST elevation $\geq$ 2mm in $\geq$ 2 contiguous precordial leads or presumed new LBBB		

Exclusion Criteria	YES	NO
Any "YES ANSWER" to the below listed questions will "EXCLUDE" the patient from being a candidate for thrombolytic therapy. Paramedic must check each box as the question is answered.		
1. Any active internal bleeding within the last 4 weeks (e.g. black tarry stools, hematemesis).		
2. History of CVA or TIA.		
3. ANY surgery within the past 4 weeks		
4. Brain tumor, AVM (arterial-venous malformation), Cerebral aneurysm		
5. Hemophilia or any known bleeding disorder		
6. Presenting hypertension, any blood pressure PRIOR to the delivery of thrombolytics that exceeds 180 systolic or 110 diastolic.		
7. Use of cocaine or amphetamines in the past 3 days		
8. Patient in cardiogenic shock (BP $<$ 90), or intubated		
9. Recent trauma, including CPR $>$ 2 minutes		
10. Back Pain indicative of a Dissecting Aneurysm, presenting as a tearing or ripping pain, in the upper back, accompanied by unequal blood pressures or distal pulses.		
11. Being treated for pericarditis, endocarditis		
12. Pregnancy		
13. Patient taking oral anticoagulation meds within the past 3 days		
Paramedic Signature:		



2.4.3 Hypertensive Emergencies

Purpose: You are NOT trying to correct a patient's chronic elevation of blood pressure on a one time EMS visit. You will NOT always see a significant change in blood pressure during the short time patient is in your possession. This protocol should be applied to patients who are:

Asymptomatic:

1. IF patient has a persistent systolic BP > **220** mm Hg and/or a diastolic BP > **130** mm Hg after 2 separate readings, 5 minutes apart, proceed as below. (If possible, take BP in other arm for one of the readings). DO NOT delay transport for BP readings/treatment. The goal is to gradually lower the BP to a more manageable range of a systolic < or = 180 mm Hg and a diastolic BP < or = 95. Should you arrive at the hospital before both readings are obtained, inform ED staff and treatment can be provided by the ED staff. If either of the two BPs falls below the 220 systolic or 130 diastolic, do not treat unless you contact medical control first.

Symptomatic:

1. IF patient has systolic BP > **180** mm Hg and/or diastolic BP > **110** mm Hg AND has **Chest pain and/or CHF/Pulmonary Edema symptoms**, follow protocol for symptoms ([Suspected AMI/Acute Coronary Syndrome](#), and/or [Pulmonary Edema/CHF](#)). High blood pressure will be treated by following those protocols.
2. IF systolic BP > **180** mm Hg and/or diastolic BP > **110** mm Hg AND patient has epistaxis (nosebleed), follow protocol below
3. IF systolic BP > **180** mm Hg and/or diastolic BP > **110** mm Hg AND patient has severe headache with or without blurred vision, follow protocol below. If you suspect a stroke (protocol [CVA/Stroke](#)), **do not lower BP** unless ordered to do so by medical control.
4. Eclampsia should be considered with female patients in their third trimester or postpartum who are hypertensive and/or seizing (Refer to [2.7.4 Eclampsia Protocol](#))

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter

ALS LEVEL 1: PARAMEDIC ONLY

1. Establish an IV of Lactated Ringers or Normal Saline at KVO prn.
2. For nose bleed;
 - a. Hold pressure against nostril on affected side. (Apply ice pack if possible).
 - b. Keep head of bed elevated between 45 – 90 degrees.



- c. Verify elevated BP with two separate readings (one in each arm or one in same arm 5 minutes apart). If elevated BP (systolic >180 mm Hg or diastolic > 110 mm Hg) x 2 readings, proceed to #4 below.
3. For severe headache with or without blurred vision;
 - a. Review patient's home medications and inquire if any medications are taken for high blood pressure.
 - b. Inquire if patient has taken their high blood pressure medication as scheduled. If patient has not yet taken their blood pressure medication and is due a dose now or over the next 2 -3 hours, have them take a dose of their prescribed medication if no nausea/vomiting. Transport and report the name of medication taken by patient to ED Staff
 - c. Inquire if patient has taken any medication for the headache in the past 6 hours (Tylenol, Motrin/Ibuprofen, any prescribed pain Rx), if not, give or assist patient with taking 1 gm of Tylenol (if not allergic) po.
 - d. Examine patient for stroke symptoms (Cincinnati Stroke Scale). Do not lower BP if stroke suspected without med control
 - e. After above measures, verify elevated BP with two separate readings (one in each arm or one in same arm 5 minutes apart). If elevated BP (systolic >180 mm Hg or diastolic > 110 mm Hg) x 2 readings, proceed to #4 below.
4. Administer Nitroglycerine 0.4mg (1 tab or spray) sublingually. Repeat q 5 - 10 min prn x 3. Monitor vital signs every 3-5 minutes. Make sure patient has not taken any erectile dysfunction drugs in previous 24 – 48 hours prior to giving nitro
5. Apply 1 inch of Nitro paste to patient's chest.
6. If blood pressure falls too low (systolic < 90), remove the Nitro Paste and give IV fluid as needed to maintain systolic between 90-110

ALS LEVEL 2: MEDICAL CONTROL

1. Labetalol (Normadyn) (Trandate) 10- 20 mg IV slowly over 2 minutes. May repeat q 10 minutes to max dose of 300mg. Contact medical control if pulse < 60.
2. Clonidine (Catapress) 0.1 mg p.o. May be repeated in 30 – 60 minutes. Max dose 2.4mg/day
3. Contact medical control or medical director if any concerns or any questions.



2.4.4 Hypotension/Shock (Unknown Cause or Immediate Cause Not Identified)

Purpose: This protocol is to be used for patients who are found to be hypotensive (Systolic BP $\leq$ 90 mm Hg) and the immediate cause may not be known. Possible causes include (but not limited to):

1. **Medications** (As per intended purpose such as any of the antihypertensive medications or as an adverse reaction or side effect of a non-antihypertensive medication):
 - a. Beta Blockers
 - b. Calcium Channel Blockers
 - c. ACE Inhibitors
 - d. Diuretics
2. **Cardiac Causes**
 - a. Low Cardiac Output (e.g. Myocardial Infarction, myocarditis)
 - i. Cardiogenic Shock
 - b. Cardiac Tamponade
3. **Low Volume States**
 - a. Severe Dehydration
 - b. Anemia acute or chronic
 - c. Acute hemorrhage (e.g. Acute GI bleed, ruptured Aortic Aneurysm)
4. **Medical Causes**
 - a. Sepsis
 - b. Anaphylaxis
 - c. Endocrine Derangements (Adrenal Crisis)
5. **Traumatic Causes (refer to appropriate trauma protocol)**
 - a. Acute traumatic hemorrhage
6. **Neurologic causes**
 - a. Head Injury
 - b. Spinal Cord Injury
 - c. CVA
 - d. Vasovagal Fainting

Signs and Symptoms:

1. Hypotension (systolic $\leq$ 90 mm Hg)
2. Normal or Decreased LOC
3. Tachycardia (may not be present due to certain medications)
4. Tachypnea and Bradycardia may be seen in spinal cord injuries
5. NOTE: Spinal Shock: Clinical presentation differs from hemorrhagic shock in that there is no catecholamine release, thus:
 - a. No pallor
 - b. No tachycardia or diaphoresis
 - c. Decreased blood pressure with normal or slow heart rate
 - d. Skin warm, dry and pink
 - e. Patient may be more alert than expected for his/her blood pressure.



If an immediate or obvious cause can be identified, refer to the appropriate protocol for additional guidance, e.g. if trauma involved, refer to the appropriate trauma protocol, for cardiac causes, refer to the appropriate cardiac protocol.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol.2.1.2.](#)
3. Attach cardiac monitor and pulse oximeter.
4. Consider placing in Trendelenburg

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV of Normal Saline (or Lactated Ringers if trauma related). If BP Systolic $\leq$ 90 mm Hg, bolus with 250 ml IV fluid and repeat up to 1 liter (2 liters if trauma). Check vital signs and breath sounds in-between each bolus.
2. If patient develops pulmonary edema during fluid bolus, discontinue bolus and follow [cardiogenic shock protocol](#).

ALS LEVEL 2: MEDICAL CONTROL

1. If after first liter (or second liter for trauma) of IV fluid bolus (and no obvious cause of hypotension), and patient's systolic BP is still $\leq$ 90 mm Hg, contact medical control for advice on giving a second liter of fluid bolus or starting a [Dopamine](#) drip. It will depend on the circumstances.



Left Ventricular Assist Devices

Purpose: The purpose of this protocol is to guide the EMS crew with managing a patient tethered to a left ventricular assist device. A ventricular assist device is a mechanical pump that is used to support heart function and blood flow in people who have weakened hearts. The device takes blood from the lower chamber of the heart and helps pump it to the body and vital organs just as a healthy heart would. Patients and family members are well versed on the management of these devices and should be able to guide you in management. Be sure when transporting patients with LVADs, that ALL the necessary supplies accompany the patient. This includes the extra batteries, chargers, and any other spare/backup components. Keep in mind, with many LVADs, you will not hear or detect a blood pressure. You will instead rely on the patient's level of consciousness, and the skin color and condition. Pulses may or may not be palpable. When the chest is auscultated, you will hear the humming of the device.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol.2.1.2.](#) Supplemental oxygen if any respiratory signs or symptoms are present
3. Attach cardiac monitor and pulse oximeter. Pulse ox may not work on these patients.

ALS LEVEL 1: PARAMEDIC ONLY

1. Auscultate Heart Sounds to determine if the device is functioning and what type of device it is. If it is continuous flow device, you should hear a "whirling sound"
2. Assess the device for any alarms.
3. Look on controller usually found around the waist of the patient to see what color tag and device it is.
4. Match the color on the device tag to the [EMS Guide LVAD Devices](#)
5. Intervene appropriately based on the type of alarm, tag (device) and EMS Guide.
6. Initiate IV of Normal Saline or LR at KVO.
7. Assess vital signs – Use Mean BP with Doppler – with the first sound you hear is the Mean Arterial Pressure (MAP).
8. If no Doppler, use the Mean on the non-invasive blood pressure machine. A manual blood pressure may not be obtainable, but with an automated cuff you will be able to obtain a pressure with a narrow pulse pressure.
9. Transport to closest VAD center if possible, otherwise to closest hospital if patient is hemodynamically unstable or to hospital of choice if patient is stable. Call the number on the device for the LVAD coordinator on call.
10. Bring all of the patient's equipment.



11. Bring the significant other if possible to act as an expert on the device in the absence of consciousness in the patient.
12. If the patient is unconscious, unresponsive to stimuli, and pulseless listen to the patient's chest. If you hear the whirling sound of the LVAD, **DO NOT PERFORM CPR**. The LVAD device has been surgically placed into the left ventricle and CPR could dislodge this device, causing death. If you cannot hear the device then CPR should be performed per cardiac arrest protocol.
13. Monitor blood glucose level if any weakness, altered mental status or history of diabetes. Treat per [Diabetes Protocol](#)
14. Nothing by mouth, unless patient is known diabetic with hypoglycemia and is able to self-administer oral glucose paste, or a glucose containing beverage.
15. Above all else please remember that these patients, along with their families, have been well trained in the care of themselves and their devices. LISTEN TO THEM!
16. Evaluate a 12 lead ECG if chest pain or ischemic equivalent symptoms (i.e. abdominal pain above the umbilicus, nausea, dizziness, chest tightness or shortness of breath.)
17. If patient meets STEMI criteria on 12 lead ECG, follow [Chest Pain Protocol](#)
18. All dysrhythmias should be treated in accordance with appropriate Dysrhythmia Protocol.
19. For conscious electrical defibrillation, the patient may be sedated with [Versed](#) 2-4mg if the MAP is greater than 65mmHg.
20. Record and monitor continuous O2 saturation, sometimes not obtainable with LVAD patients. In addition you may utilize End Tidal Co2 capnography.
21. If evidence of dehydration, bolus 250 ml of Normal Saline with a max of 500 ml of NS until patient is normotensive, (= or > 65 MAP). If patient shows signs of Congestive Heart Failure (crackles on auscultation of lungs, JVD or peripheral edema) withhold fluid bolus.
22. . If patient suffering from severe nausea or vomiting, follow Protocol [Nausea and Vomiting](#).
23. . Minimize on scene time when possible

ALS LEVEL 2: MEDICAL CONTROL



2.5 Adult Neurological/Psychological/Behavioral Emergencies



2.5.1 Altered Mental Status/Coma

Purpose: This protocol is to be used for any patient with an altered mental status or unconscious for unknown reasons. Remember, the cause could be multifactorial. Look for clues at the scene, i.e. empty pill bottles, notes. Check for medical alert bracelets or necklace that may identify diabetics or other medical conditions. Use appropriate discretion regarding immediate intubation of patients who may quickly regain consciousness, such as hypoglycemics after D50 or opiate overdose cases after Narcan. Remember C-spine precautions if indicated.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#)
3. Attach cardiac monitor and pulse oximeter.
4. Alcoholics with any evidence of head trauma and altered mental status must be considered to have a closed head injury until proven otherwise. Treat them as such including C-spine precautions.
5. Notify law enforcement for assistance with any combative or uncooperative alcoholic with an altered mental status.
6. Assess for and document [Glasgow Coma Scale](#)
7. Transport to designated hospital.

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider need for intubation and always remain vigilant of the patient's respiratory status
2. Initiate IV of lactated Ringer's or normal saline at TKO. If patient is tachycardia and/or hypotensive, give a 250 ml bolus then run at 100cc/hr.
3. Determine serum glucose level with Glucometer or Dextrostix;
 - a. If sugar 60 mg/dl - 80 mg/dl; Sublingual glucose paste, or [Glucagon](#) 1mg IM or ½ amp of 25gm [50% Dextrose](#) IV
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm [50% Dextrose](#) IV or [Glucagon](#) 1 mg IM
 - c. If Blood sugar > 300mg/dL with signs of dehydration, administer bolus of IV normal saline 500 ml then run in at 100cc/hr
4. If history of drug abuse, and patient has constricted pupils or respiratory depression, assist respirations as needed and administer [Narcan](#) 1 -2 mg IV
5. If history suspicious for alcoholism, administer [Thiamine 100 mg](#) IV (slow) or IM.
6. If history of Benzodiazepine usage, monitor/support respirations and report to Emergency Department staff.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact Medical Control or Medical Director for any questions or problems.



NOTE:

- (a)** To avoid infiltration and tissue necrosis, Dextrose 50% should be given slow IV with intermittent aspiration of IV line to confirm IV patency followed by saline flush.
- (b)** Consider restraints if necessary for patient and/or personnel's protection per restraint procedure protocol.

2.5.2 Behavioral / Violent /Psychiatric Emergencies



Purpose: This protocol is for patients with psychiatric problems. If patient is violent and an immediate threat to him/herself, EMS crew or bystander safety exists, restraint should be used to prevent patient from harming him/herself or others. If patient is not violent, be observant for possibility of violence and avoid provoking patient. Particular caution should be exercised when any “non-lethal” law enforcement device (e.g. pepper spray, taser, etc.) has been employed. Respect the dignity of the patient. Teamwork between EMS personnel and law enforcement will improve patient care.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq 94\%$ (non-rebreather @15 LPM if SpO₂ < 90%).
3. Rule out other causes other than psychiatric (e.g. hypoglycemia, hypoxia, CVA, drug overdose, ETOH).
4. If attempts at verbal control are unsuccessful, use reasonable [physical restraints](#). Every attempt should be made to avoid injury to the patient when using physical restraint. If necessary, use standard restraining techniques and devices. Use sufficient padding on extremity restraints on elderly patients or others with delicate skin.
5. **Avoid positional asphyxia!!! Do Not transport patient in a “hog tied” prone position. Transport patient lying on their side or supine. If patient still agitated, have law enforcement ride in back of ambulance. If law enforcement refuses to reposition a restrained prone patient on their side, law enforcement MUST ride in with patient.**
6. Communicate in a calm and non-threatening manner.
7. Attach cardiac monitor and pulse oximeter if indicated (must be on any patient restrained, physical or chemical)
8. Constantly monitor and observe the patient to prevent injury.
9. Carefully document the rationale for the use of restraints.
10. All individuals being transported for psychological evaluation under the premise of a Baker Act (or equivalent document for involuntary evaluation/treatment) should be accompanied by a police officer. The paramedic in charge shall determine whether the police officer will ride in back or follow behind the EMS unit.
11. In those situations where a female patient is being transported and a female is not part of the EMS crew, the paramedic should attempt to have a female police officer accompany the patient to the hospital. This is imperative in situations such as possible rape. Also document beginning and ending mileage with dispatch via radio.

ALS LEVEL 1: PARAMEDIC ONLY

1. If altered mental status, determine serum glucose level with Glucometer or DextroStix:

Adult Protocols



- a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 50% Dextrose 25gm IV or Glucagon 1mg IM or Sublingual glucose paste, May repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm 50% Dextrose IV or Glucagon 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to Hyperglycemia Protocol.
2. Use chemical restraints in conjunction with physical restraint if the latter is unsuccessful in controlling violent behavior.
 3. For Chemical restraint:
 - a. Establish and IV of Lactated Ringers or Normal Saline at KVO (if patient's extremity can be held down for the procedure [with assistance]), otherwise give medications IM
 - b. Administer one of the following benzodiazepines:
 - i. Diazepam (Valium) 5 – 10mg IV or IM. Higher dosing per medical control
 - ii. Midazolam (Versed) 2-4 mg IV or IM. May repeat x 1 PRN. Higher dosing per medical control
 - c. If additional sedation needed for severely agitated patient or if extrapyramidal side effects from medical control ordered Haldol, administer Diphenhydramine (Benadryl) 25 – 50 mg IV or IM. Use the higher dose for very large patients.
 4. If history of alcoholism, or alcoholism suspected administer Thiamine 100 mg IV or IM.
 5. Monitor any physically or chemically restrained patient closely for respiratory compromise and plan to intervene accordingly

ALS LEVEL 2: MEDICAL CONTROL

1. For agitated/violent patient: Haldol (haloperidol) 5 -10 mg IM.
2. Notify medical control or medical director for any problems or concerns.



2.5.3 Excited Delirium

Medical adult protocol

Purpose: This protocol is to be used on patients suspected of being in a state of excited delirium. Excited delirium is reported to result from substance intoxication (especially cocaine, Spice and Bath Salts), psychiatric illness, alcohol withdrawal, head trauma, or a combination of these. Excited delirium is sometimes called **excited delirium syndrome** if it results in sudden death (usually via cardiac or respiratory arrest), an outcome that is sometimes associated with the use of physical control measures, including police restraint and tasers. The signs and symptoms for excited delirium may include:

- Paranoia
- Insensitivity to pain
- Psychomotor agitation
- Anxiety
- Disorientation
- **Hyper-aggression**
- Tachycardia
- Hallucination
- Incoherent speech or shouting
- **Seemingly superhuman strength or endurance (typically while trying to resist restrain efforts)**
- Hyperthermia (overheating)/profuse sweating (even in cold weather)

Other medical conditions that can resemble excited delirium are panic attack, hyperthermia, diabetes, head injury, delirium tremens, and hyperthyroidism.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. THESE PATIENTS ARE HYPER-AGITATED AND CAN HAVE SUPER-HUMAN STRENGTH. DO NOT ATTEMPT TO APPROACH PATIENT UNTIL SCENE IS SECURED BY LAW-ENFORCEMENT
2. YOU MUST HAVE SUFFICIENT NUMBER OF TEAM MEMBERS TO MANAGE THESE PATIENTS.
3. [Initial Patient Assessment Protocol 2.1.1](#) when able to gain control of patient
4. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq 94\%$ (non-rebreather @15 LPM if SpO₂ < 90%). (Patient is using a lot of oxygen during hyper-metabolic state)
5. Rule out other causes other than psychiatric (e.g. hypoglycemia, hypoxia, CVA, drug overdose, ETOH).
6. If attempts at verbal control are unsuccessful, use reasonable physical restraints until such time as patient can be medicated. Use the least restrictive method of restraint; allow the patient to correct



inappropriate behavior. Every attempt should be made to avoid injury to the patient when using physical restraint. If necessary, use standard restraining techniques and devices. Use sufficient padding on extremity restraints on elderly patients or others with delicate skin.

7. **Avoid positional asphyxia!!! Do not transport patient in a “hog tied” prone position. Transport patient lying on their side or supine. If patient still agitated, have law enforcement ride in back of ambulance.**
8. Communicate in a calm and non-threatening manner.
9. Attach cardiac monitor and pulse oximeter as soon as it is feasible (**must** be on any patient restrained, physical or chemical)
10. Constantly monitor and observe the patient to prevent injury.

ALS LEVEL 1: PARAMEDIC ONLY

1. If it is not possible to safely manage patient due to hyper-aggression and agitation, administer one of the following:
 - a. Versed 2 – 4 mg IM (or IV if able to safely get an IV) may repeat 3 – 5 minutes PRN up to 10 mg.
 - b. Diazepam (Valium) 5 – 10mg IM (or IV if able to safely get an IV) may repeat x 1 PRN.
 - c. Haldol 5 – 10 mg IM (DO NOT GIVE HALDOL IV!) followed by Diphenhydramine (Benadryl) 25-50 mg IM or IV. Must be on cardiac monitor
2. If IV had not been established before, start IV of Lactated Ringers or NS at KVO. Bolus with 250 mg increments as needed for systolic BP < 90 mm Hg and/or HR > 120.
3. If altered mental status, and when safe to do so, determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 50% Dextrose 25gm IV or Glucagon 1mg IM or Sublingual glucose paste, May repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm 50% Dextrose IV or Glucagon 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to Hyperglycemia Protocol
4. If patient body temperature exceeds 102° F, move patient to cooler environment, and remove clothing. Cool aggressively with wet sheets, cool packs, and/or evaporative airflow. Avoid ice packs and cold water immersion. Lower body temperature to 102° F (39C).
5. If patient goes into cardiac arrest, treat accordingly and administer 1 amp of Sodium Bicarb early as they are usually very acidotic.
6. Monitor any physically or chemically restrained patient closely for respiratory compromise and plan to intervene accordingly

ALS LEVEL 2: MEDICAL CONTROL

1. Notify medical control or medical director for any problems or concerns.



2.5.4 Seizures

Purpose: This protocol should be used when the patient has witnessed continuous convulsions (generalized tonic-clonic seizure or Grand Mal) or repeating episodes without regaining consciousness or sufficient respiratory decompensation. Consider underlying etiology, such as: hypoglycemia, drug overdose, head injury, or fever. Other types of seizures include: absence (Petit Mal), simple partial (focal motor and Jacksonian), complex partial (Psychomotor or Temporal Lobe), atonic (drop attacks), and myoclonic. When the patient is continuously showing signs of these other types of seizures, medical supportive care should be initiated and the paramedic should contact medical control for further direction. Females in their second or third trimester of pregnancy (≥ 20 weeks gestation) that are seizing should be assumed to have eclampsia. It should also be noted that eclampsia can occur postpartum (≤ 1 week).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ to 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter
4. Assess for and document the [Glasgow Coma Scale](#)
5. **If not actively seizing:**
 - a. Open airway and suction PRN.
 - b. Proceed with secondary survey.
 - c. Obtain history.
6. **If actively seizing:**
 - a. Protect patient from injury.
 - b. Do not attempt to insert tongue blade or oral airway.
 - c. Suction p.r.n.
 - d. Nasopharyngeal airway may be useful.
7. **If recent seizure, and patient is postictal:**
 - a. Place in recovery position.
 - b. Suction p.r.n.
 - c. Transport.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
2. If Eclamptic female (go to [Eclampsia Protocol](#)), administer [Magnesium Sulfate](#) 4gms IV (mixed in 50 ml of D5W given over 5 – 10 minutes)
3. If seizing, administer one of the following benzodiazepines:
 - a. [Midazolam \(Versed\) 5 mg IM or 2-4 mg IV](#). May repeat each x 1 PRN

Adult Protocols



- b. **Diazepam (Valium)** 5 – 10mg IV or IM
- 4. Determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of **25 gm 50% Dextrose IV** or **Glucagon 1mg IM**. May repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm **50% Dextrose IV** or **Glucagon 1 mg IM**
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to **Hyperglycemia Protocol**.

ALS LEVEL 2: MEDICAL CONTROL

- 1. Notify medical control or medical director for any problems or concerns.



2.5.5 CVA / Stroke

Purpose: This protocol is used for those patients exhibiting signs consistent with acute stroke/CVA/"Brain Attack" (altered mental status, slurred speech, loss of function of any body part, hemiplegia, loss of vision, weakness of facial muscles, loss of sensation, drooling, etc.). Other causes should be ruled out (hypoglycemia, drug overdose, hypoxia, etc.).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1.](#)
2. [Airway Assessment/Management Protocol 2.1.2.](#) Oxygen via nasal canula @2 - 4 LPM to maintain pulse ox of $\geq 94\%$ (non-rebreather @15 LPM if $SpO_2 < 90\%$)
3. When CVA is suspected, transport to the hospital should not be delayed. Determine if patient has facial droop, abnormal speech, or arm drift.
4. If possible place in supine position with head of bed flat for transport (if patient unable to tolerate, transport in Semi-Fowler's with the head of bed no greater than 30 degrees).
5. Assess for and document [Glasgow Coma Scale](#)
6. Attach cardiac monitor and pulse oximeter.
7. Keep patient NPO.
8. **Determine time of onset of symptoms (time last seen normal). If onset of symptoms is within 5 - 6 hours notify hospital of a possible "stroke alert".**
9. Try to ascertain if patient had a seizure prior to onset of "stroke" symptoms as he/she may have a condition called Todd's paralysis, which is NOT treated with thrombolytics. Relay this information to the hospital
10. If applicable, transport to the appropriate designated Stroke Center.
11. Cincinnati Pre-hospital Stroke Scale:
 - a. Assess for the unilateral presence of at least one of the following:

Item Description

 1. Facial droop: Ask the patient to smile. Watch for weakness on one side of the face.
 2. Arm drift: Ask the patient to hold both arms out with palms up and eyes closed for 10 seconds. Watch for a drift of one side. A positive result is present if there is weakness in one arm. Weakness in both arms or normal strength is a negative test result.
 3. Slurred speech: Ask the patient to repeat a simple sentence such as "The sky is blue in Cincinnati."
Inability to repeat the words correctly and intelligibly is a positive result.

ALS LEVEL 1: PARAMEDIC ONLY

1. Endotracheal intubation if patient does not have an intact gag reflex or for markedly decreased LOC, inability to maintain a patient airway, or for GCS ≤ 8 .



2. Initiate IV lactated Ringer's or normal saline at 75cc/hr for patients 12 yrs. or older. Obtain two intravenous lines if possible.
3. Determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 25gm 50% Dextrose IV or Glucagon 1mg IM or Sublingual glucose paste, may repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm 50% Dextrose IV or Glucagon 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to Hyperglycemia Protocol.
4. If a stroke patient is found to be hypertensive, do not treat in the pre-hospital setting unless ordered to do so by medical control. Hypertension could represent a compensatory response to the stroke to increase the cerebral perfusion pressure.
5. If CVA is suspected and if time permits, complete the thrombolytic/fibrinolytic screening form (see forms section)
6. Treat seizures with:
 - a. Valium 5-10 mg IVP or Versed 5 mg IM or 2-4 mg IVP (may repeat x 1). Monitor respiratory efforts and intervene as indicated.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control if seizure did not respond to Valium
2. Contact medical control for treatment of agitation with:
3. Valium 2-5 mg IVP. May repeat every 10 minutes to a maximum of 10 mg. Or Versed 2 mg IV. May repeat x 1 PRN. Maximum dose 4mg.
4. In the presence of acute stroke (CVA), hypertension may be lowered in special circumstances only with a physician order.

The **Cincinnati Prehospital Stroke Scale** is a system used to diagnose the presence of a stroke in a patient. It tests three signs for abnormal findings which may indicate that the patient is having a stroke. If any one of the three tests shows abnormal findings, the patient may be having a stroke and should be transported to a hospital as soon as possible.

1. *Facial droop*: Have the person smile or show his or her teeth. If one side doesn't move as well as the other so it seems to droop, that could be sign of a stroke.
 - Normal: Both sides of face move equally
 - Abnormal: One side of face does not move as well as the other (or at all)
2. *Arm drift*: Have the person close his or her eyes and hold his or her arms straight out in front for about 10 seconds. If one arm does not move, or one arm winds up drifting down more than the other, that could be a sign of a stroke.
 - Normal: Both arms move equally or not at all
 - Abnormal: One arm does not move, or one arm drifts down compared with the other side



3. *Speech*: Have the person say, "You can't teach an old dog new tricks," or some other simple, familiar saying. If the person slurs the words, gets some words wrong, or is unable to speak, that could be sign of stroke.
 - Normal: Patient uses correct words with no slurring
 - Abnormal: Slurred or inappropriate words or mute

Patients with 1 of these 3 findings as a new event have a 72% probability of an ischemic stroke. If all 3 findings are present the probability of an acute stroke is more than 85%



Stroke Protocol Checklist

- ☐ Assure ABC's.
- ☐ Administer oxygen prn O2 sat < 94% by nasal cannula.
- ☐ Obtain symptom duration, time of onset or last time patient was seen normal.
- ☐ If patient is a "stroke alert" patient then transport in most expeditious mode possible.
- ☐ Position head of bed 30 degrees, if patient unable to tolerate, transport flat.
- ☐ If symptoms are within 5 - 6 hours of onset notify receiving facility of a "stroke alert".
- ☐ Cardiac monitor. Document cardiac rhythm.
- ☐ Pulse ox.
- ☐ Vital signs.
- ☐ Initiate intravenous line. Establish two if possible. Run fluids on 12 yrs or older at 75cc/hour.
- ☐ Determine serum glucose level
- ☐ Treat seizures with Valium 5-10 mg.
- ☐ Keep patient NPO.
- ☐ History of seizures?
- ☐ Facial droop?
- ☐ Abnormal speech?
- ☐ Arm drift?
- ☐ Glasgow coma scale.
- ☐ Do not lower blood pressure in suspected strokes.
- ☐ Document all protocol items on run report.
- ☐ Bring a family member to the hospital if it is possible, to answer questions regarding the patients condition.



2.5.6 Syncope

Purpose: This protocol should be used for patients with a chief complaint of syncopal episode. Consider history and possibility of dysrhythmia, medication side effects, glucose imbalance, inner ear disorder, CVA, TIA, and MI. Bradycardia with hypotension may be due to inferior wall MI associated with right ventricular infarction (confirm on 12 lead ECG V4R ST elevation). When an inferior wall MI is associated with right ventricular MI, use extreme caution giving nitrates (Nitroglycerine). If bradycardia and hypotension exists, pacing and IV fluids may improve the patient's hemodynamic status.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq 94\%$ (non-rebreather @15 LPM if SpO₂ < 90%).
3. Obtain pertinent history:
 - a. Time of syncopal episode and length of unconsciousness.
 - b. Patient's position at time of syncope.
 - c. Symptoms preceding event (dizziness, nausea, chest pain, headache, seizures, etc.)
 - d. Medications / ETOH / drug usage
 - e. Relevant past medical history.
4. Assess for and document the [Glasgow Coma Scale](#)
5. Attach cardiac monitor and pulse oximeter if indicated

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
2. Determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 25gm [50% Dextrose](#) IV or [Glucagon](#) 1mg IM. May repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm [50% Dextrose](#) IV or [Glucagon](#) 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to [Hyperglycemia Protocol](#).
3. Perform [12 lead ECG](#). Transmit 12 Lead ECG to destination hospital, if available. If inferior wall MI is identified (ST segment elevation in leads II, III, and AVF), perform additional 12 Lead ECG with V4R to confirm/rule out concurrent right ventricular MI.
4. If any dysrhythmias, go to the appropriate protocol.

ALS LEVEL 2: MEDICAL CONTROL

1. Notify medical control or medical director for any problems or concerns.





2.6

Adult Toxicology Emergencies



2.6.1 Bites and Stings

Purpose: This protocol is for patients who have been bitten or stung by snakes, animals, humans, insects, and spiders. If any marine life was involved please refer to the separate [Marine Envenomation Protocol](#). If you have any questions or concerns about the treatment of a particular bite or sting, **Contact Poison Information Center (1-800-222-1222)**. The ALS Level 1 and 2 procedures below apply to all the bites and stings, no matter what the cause. Do not use hydrogen peroxide on deep puncture wounds or wounds exposing fat. Apply sterile dressings to all wounds when appropriate.

Procedure:
SNAKEBITE

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated, Oxygen via nasal cannula @2 - 4 LPM to maintain oxygen saturation $\geq$ to 94% (non-rebreather @15 LPM if $SpO_2 < 90\%$).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Kill the snake if concerned it is poisonous, if practical, and bring the dead snake to the emergency department (or identify). Do not mutilate the snake's head.
5. If bite on extremity, immobilize affected extremity in dependent position. Patient should remain still. A constricting band may be of some use in a few circumstances such as immediate care not available or prolonged transport time. Contact med control for order/advise.
6. Remove watches, rings, and jewelry from affected extremity (or all jewelry if general anaphylaxis).
7. Wash area of bite with copious amounts of water.
8. Check temperature and pulse distal to bite on extremity and mark level of swelling and time with pen every 15 minutes
9. If signs of toxicity (local edema and hypotension):
 - a. Increase oxygen delivery to 100% via non-rebreather mask. IV as below in ALS Level 1.
10. If obvious severe reaction developing from obvious poisonous snake, i.e. large amount of ascending edema and ecchymosis from bite of rattlesnake or water moccasin, alert medical control as early as possible so they can start acquiring anti-venom from the pharmacy, some of which takes time to prepare.

General Information:

Pit Vipers: rattlesnake, water moccasin, and copperhead typically cause puncture wounds. There may be ecchymosis at site, localized pain, swelling, weakness, tachycardia, nausea, shortness of breath, dim vision, vomiting, or shock.

Coral Snakes: Usually chewed wound. There may be slight burning pain, mild swelling, blurred vision, drooping eyelids, slurred speech, drowsiness, salivation and sweating, nausea and vomiting, shock, respiratory difficulty, paralysis, convulsions, and coma.



DOG, CAT, AND WILD ANIMAL BITES

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated, Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox greater than or equal to 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Clean area with soap and water.
5. Advise Dispatch to contact animal control and/or law enforcement for identification and quarantine of animal.

INSECT STING (INCLUDING: CENTIPEDES, SCORPIONS, AND SPIDERS)

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated, Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox greater than or equal to 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Remove stinger by scraping skin with edge of flat surface (e.g. credit card). Do not attempt to pull stinger out, as this may release more venom.
5. Clean area with soap and water.

HUMAN BITES

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated, Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox greater than or equal to 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Clean area with soap and water.

ALS LEVEL 1: PARAMEDIC ONLY (For all the above causes):

1. Initiate IV (if indicated, in unaffected extremity) Lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
2. Refer to [Allergic Reaction Protocol](#) if indicated
3. If severe pain, refer to [Pain Protocol](#).

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.6.2 Toxicology - (Drug Overdose /Poisoning)

Purpose: This protocol is to be used for those patients suspected of exposure to toxic substances via any route of exposure. A history of the events leading to the illness or injury should be obtained from the patient and/or bystanders to include: What drugs, poisons, or other substance(s) was the patient exposed? Consider multiple substances, especially on overdoses.

- Route of exposure (ingested, inhaled, injected, surface contamination.)?
- Type and amount of poison/drug?
- Duration of symptoms?
- Is patient depressed, suicidal? History of previous overdose?
- Accidental? Nature of accident?
- Duration of exposure (if applicable)
- Has patient vomited? If so, when?
- History of drug or ETOH usage.
- Pre-existing medical problems

Contact Poison Information Center (**1-800-222-1222**) as needed for assistance and advice. The following is a partial list of drugs/chemicals you may encounter in overdose/exposure situations and a brief review of the signs and symptoms.

CNS DEPRESSANTS: Altered mental status, respiratory depression, hypotension, bradycardia, pulmonary edema, coma, and constricted pupils (opioids only).

Benzodiazepines: generic (trade name)

- Alprazolam (Xanax)
- Chlordiazepoxide (Librium)
- Clonazepam (Klonopin)
- Clorazepate (Tranxene)
- Diazepam (Valium)
- Flunitrazepam (Rohypnol)
- Flurazepam (Dalmane)
- Halazepam (Paxipam)
- Lorazepam (Ativan)
- Midazolam (Versed)
- Oxazepam (Serax)
- Prazepam (Centrax)
- Quazepam (Doral)
- Temazepam (Restoril)
- Triazolam (Halcion)

Barbiturates: generic (trade name)

- Butabarbital sodium (Butisol Sodium)
- Mephobarbital (Mebaral)
- Pentobarbital sodium (Nembutal Sodium)
- Phenobarbital



- Secobarbital sodium (Seconal Sodium)

Designer Drugs:

- Blue nitro, GHB

Opioids, Narcotics, Synthetics and Combinations: generic (trade name)

- Acetaminophen & Codeine phosphate (Tylenol #3, Tylenol #4)
- Alfentanil HCL (Alfenta)
- Alfentanil (Alfenta)
- Alphaprodine (Nisentil)
- Aspirin & codeine phosphate (Empirin with Codeine #3 and #4)
- Belladonna and opium (B & O Supporettes)
- Buprenorphine HCL (Buprenex)
- Butalbital, aspirin, caffeine, Codeine phosphate (Fiorinol or Fioricet with Codeine)
- Butorphanol (Stadol)
- Codeine
- Dextromethorphan
- Diamorphine (Heroin)
- Diacetylmorphine (Heroin)
- Dihydrocodeine bitartrate, acetaminophen, caffeine (DHC plus)
- Diphenoxylate HCL, atropine sulfate (Lomotil)- no miosis
- Difenoxin HCL with atropine sulfate (Motofen)
- Fentanyl citrate (Sublimaze)
- Fentanyl transdermal (Duragesic)
- Fentanyl citrate & droperidol (Innovar)
- Hydromorphone HCL (Dilaudid, Hydrostat)
- Hydrocodone bitartrate (Lortab, Hycodan, Anexsia)
- Hydrocodone bitartrate & acetaminophen (Hydrocet, Loracet, Vicodin)
- Loperamide HCL (Immodium, Immodium A-D)
- Levorphanol tartrate (Levo-Dromoran)
- Meperidine HCl (Demerol) – no miosis
- MeperidineHCl & promethazine HCl (Mepergan) – no miosis
- Methodone HCl(Dolophine)
- Morphine sulfate (Astramorph/PF, Duramorph, Infumorph 200, Infumorph 500, MS Contin, MSIR, Oramorph, Rescudose, Roxanol)
- Nalbuphine HCL(Nubain)
- Napsylate (Darvocet-N)
- Oxymorphone HCl (Numorphan)
- Oxycodone (Percodan, Percocet, Tylox, Roxicodone)
- Pentazocine HCl (Talwin, Talacen)
- Propoxyphene HCl (Darvon-N)
- Propoxyphene HCl & acetaminophen (Wygesic)
- Sufentanil (Sufenta)



Sedative Hypnotics: generic (trade name)

- Compoz
- Estazolam (Prosom)
- Etomidate (Amidate)
- Ethchlorvynol (Placidyl)
- Propofol (Diprivan)
- Sleep-ez
- Sominex
- Zolpidem tartrate (Ambien)

SSRI- Selective Sereotonine Reuptake Inhibitors: generic (trade name)

- Fluoxetine (Prozac)
- Paroxetine (Paxil)
- Sertraline (Zoloft)
- Fluvoxamine (Luvox)
- Citalopram (Celexa)

CNS STIMULANT: Dilated pupils, agitation, paranoia, bizarre behavior, PVCs, tachycardia, hypertension, hyperthermia, seizures, etc.

Cocaine:

- Crack
- Cocaine

Amphetamines:

- Amphetamine variants (DMA, PMA, PMMA, STP, MDA, MDMA, TMA, DOM,DOB)

Designer Drugs:

- Ecstasy

DIGITALIS: Digitalis toxicity should be suspected in patients who are taking digitalis and have a dysrhythmia associated with digitalis toxicity (e.g. bradycardia, AV blocks with rapid ventricular response, supraventricular tachycardia, ventricular ectopy, and other ECG changes: Wide PR interval, short QT interval-rate dependent, spoon-shaped ST segment, peaked T wave). The oleander tree can also cause a digitalis type toxicity, which will cause the same type of dysrhythmias and requires the same treatment.

Digitalis: generic (trade name)

- Digoxin (Lanoxicaps, Lanoxin, Digoxin)
- Digitoxin (Crystodigin)

HALLUCINOGEN: Illusions, hallucinations, poor perception of time and distance, possible paranoia, anxiety, panic, unpredictable behavior, emotional instability, possible flashbacks, dilated pupils, and rambling speech.

- LSD (acid, microdot)
- Mescaline and Peyote (mesc, buttons, cactus)
- DET
- MET
- Psilocybin



TRICYCLIC ANTIDEPRESSANTS: CNS depression, tachycardia, dilated pupils, respiratory depression, slurred speech, twitching and jerking, seizures, ST and T wave changes, wide QRS complex, R waves in lead AVR, S waves in leads AVL and lead I, and shock.

Tricyclic Antidepressant:

- Doxepin HCl (Adapin, Sinequan)
- Amitriptyline HCl (Elavil, Endep)
- Protiptyline HCl (Vivactil)
- Chlordiazepoxide & amitriptyline HCl (Limbitrol)
- Trimipramine maleate (Surmontil)
- Perphenazine & amitriptyline HCl (Etrafon, Triavil)
- Clomipramine HCl (Anafranil)
- Amoxapine (Asendin)
- Desipramine HCl (Norpramin)
- Nortriptyline (Pamelor, Aventyl)
- Imipramine pamoate (Tofranil)

Cyclic Antidepressants:

- Venlafaxine (Effexor)

ORGANOPHOSPHATES; Excessive; salivation, lacrimation (tears)/sweating, urinary incontinence, diarrhea, gastrointestinal distress, emesis and bradycardia (tachycardia may occur). CNS; anxiety, restlessness, emotional lability, tremor, headache, dizziness, mental confusion, delirium, hallucinations, and seizures.

Insecticides:

- Diazinon
- Orthene
- Malathion
- Parathion
- Chlorpyrifos

PHENOTHIAZINE: CNS; CNS depression, Dystonic reaction, extrapyramidal symptoms, tardive dyskinesia, neuroleptic malignant syndrome. Cardiovascular; tachycardia, prolonged QT interval, widened QRS, AV blocks, torsade de pointes. Dilated pupils, seizures, cardiac dysrhythmias

- Chlorpromazine (Thorazine)
- Prochlorperazine maleate (Compazine)
- Trifluoperazine (Stelazine)
- Thioridazine (Mellaril)
- Thiothixene (Navane)

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).



3. Attach cardiac monitor and pulse oximeter
4. Assess for and document the [Glasgow Coma Scale](#)
5. Collect all pill bottles, empty or full, and check for suicide notes (if applicable). Transport any/all information or items that may assist in the treatment of the patient to the emergency department.
6. **If inhaled poison:**
 - a. Assure personal safety.
 - b. Remove patient to fresh air.
 - c. Administer 100% oxygen via non-rebreather mask.
7. **If skin or eye contamination:**
 - a. Assure personal safety.
 - b. Remove contaminated clothes.
 - c. Irrigate with water or normal saline.
8. **If actively seizing:**
 - a. Protect patient from injury.
 - b. If seizing before airway was controlled, do not attempt to insert tongue blade or oral airway. Nasopharyngeal airway may be useful.
 - c. Suction p.r.n.

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider need to support respirations/ventilation including need for intubation at any time if respiratory status deteriorates.
 - a. Monitor respiratory status frequently.
 - b. Use appropriate discretion regarding immediate intubation of patients who may quickly regain consciousness, such as hypoglycemics after D50 or opiate overdose after Naloxone.
2. If condition warrants, initiate IV lactated Ringer's or Normal Saline at 125ml/hr (draw blood sample if possible prior to any drug administration). If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children).
 - a. Recheck vital signs and lung exam in-between each increment.
 - b. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
3. If altered mental status, determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 25gm [50% Dextrose](#) IV or [Glucagon](#) 1mg IM. May repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm [50% Dextrose](#) IV or [Glucagon](#) 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to [Hyperglycemia Protocol](#) .
4. Treat any dysrhythmias per appropriate protocol.

Adult Protocols



5. If actively seizing administer one of the following benzodiazepines:
 - a. Diazepam (Valium) 5 – 10mg IV or IM
 - b. Midazolam (Versed) 2mg IV or IM. May repeat x 1 PRN.
6. If patient is experiencing chest pain, go to chest pain protocol
7. If patient combative, consider need for physical and chemical restraints (see psychiatric emergency protocol)
8. If bronchospasm is present give an Albuterol (Ventolin) nebulized treatment, containing 2.5mg of Albuterol pre-mixed with 2.5 ml normal saline. May repeat x 2 PRN. Add Ipratropium Bromide (Atrovent) 0.5 mg (0.5 ml) to the first neb treatment only. Do not give Albuterol or Ipratropium Bromide if heart rate is ≥ 140 .
9. If ingestion is suspected with unknown substance and there is no altered mental status and caustic ingestion can be ruled out, if patient is willing/cooperative; place patient in Fowler's position and administer Activated Charcoal 50 – 100 grams po. If the timing of the ingestion has been less than an hour of EMS's arrival, hold off giving the charcoal until you discuss with medical control as some physicians may instead, choose to lavage the patient on arrival to the emergency department
10. For symptomatic CNS DEPRESSANT OVERDOSE:
 - a. Do 12 lead ECG. If QRS complex is wide (> 0.10 seconds), administer Sodium Bicarbonate 1 mEq/kg IV
 - b. If respiration is depressed, administer Naloxone (Narcan) 2mg IV. May repeat Naloxone (Narcan) 2mg IV PRN
11. For symptomatic STIMULANT OVERDOSE:
 - a. If patient is hyperthermic (hot to touch), aggressively cool patient
 - b. NOTE: Beta-blockers are contraindicated in cocaine overdose!
12. For symptomatic DIGITALIS TOXICITY:
 - a. Treat tachydysrhythmias with medication per specific protocol. Avoid the use of Calcium Chloride.
 - b. If unstable tachycardia $> 150/\text{min}$, synchronize cardiovert with energy settings between 5 – 20 jules
 - c. If unstable bradycardia with wide QRS (> 0.10 seconds), give Sodium Bicarbonate 1 mEq/kg
13. For symptomatic TRICYCLIC ANTIDEPRESSANTS OVERDOSE:
 - a. Do 12 lead ECG. If QRS complex is wide (> 0.10 seconds), administer Sodium Bicarbonate 1 mEq/kg IV
 - b. ROMAZICON, PROCAINAMIDE, AND LABETALOL (ALL BETA BLOCKERS) ARE CONTRA-INDICATED IN TRICYCLIC ANTIDEPRESSANT OVERDOSE.
14. If symptomatic ORGANOPHOSPHATE POISONING:
 1. Atropine 0.03 mg/kg IVP every 5-10 minutes until atropinization occurs.
15. If symptomatic PHENOTHIAZINE (Thorazine, Compazine, Stelazine, Mellaril, Navane)
 - a. Diphenhydramine (Benadryl) 25-50mg IV or deep IM

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any problems or concerns.



2.6.3 Marine Envenomations

Purpose: This protocol is for patients who are injured by any type of marine life. Call Poison Information Center (**1-800-222-1222**) as needed for assistance. If non-scalding hot soaks are advised, do not delay transport. Soak enroute to hospital.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated, Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter if indicated

For Sponges:

1. Gently dry skin and remove spicule. Adhesive tape may aid in removal.
2. Soak with 5% vinegar or 40-70% isopropyl alcohol.

For Coelenterates (JELLYFISH):

1. Rinse wound with saltwater or seawater
2. Do not rub skin, do not apply ice, and do not rinse with fresh water.
3. Inactivate toxin with 30 minute soak using one of the following:
 - a. 5% vinegar soaks.
 - b. Ammonia/meat tenderizer paste mixture.
4. Remove remaining nematocysts with razor.
5. Consider topical anesthetics once nematocyst is removed.

For Echinodermata (Starfish, sea urchins, sea cucumber,):

1. Immerse in non-scalding hot water for pain relief for 30 – 90 minutes (do not delay transport, soak en-route)
2. Remove any remaining spines.
3. After hot water soak, 5% vinegar soaks.

For Mollusks (Cone shells):

1. Hot water (non-scalding) immersion for pain relief
2. Be prepared for cardiac or respiratory support

For Stingrays:

1. Copious irrigation with removal of any visible spines.
2. Hot water (non-scalding) soaks for pain relief.

For Scorpion fish:

1. Hot water (non-scalding) soaks for pain relief and venom inactivation.
2. Copious irrigation with removal of any visible spines.
3. Patient may require stonefish antivenin for severe envenomation.



For Catfish:

1. Hot water (non-scalding) soaks for pain relief and venom inactivation.
2. Copious irrigation with removal of any visible spines.

For Sea Snakes:

1. Immobilize bitten extremity.
2. Apply pressure bandage for venous occlusion.
3. Keep patient warm and still.
4. Notify medical control, as hospital may need to acquire polyvalent sea snake antivenin.
5. Closely monitor cardiac and respiratory status.

ALS LEVEL 1: PARAMEDIC ONLY

1. Establish large bore IV of lactated Ringer's to maintain systolic pressure > 90 mm Hg.
2. If any chest tightness, wheezing, shortness of breath, difficulty swallowing, intraoral swelling, and/or severe hives;
 - a. Administer **Diphenhydramine (Benadryl)** 25-50 mg IV (for peds 2- 12 yrs old, give 1- 1.25mg/kg IV or IM).
 - b. Consider **Epinephrine 1:1,000** 0.4ml IM or SUB-Q (for peds; 0.01mg/kg, Max 0.3ml).
3. For severe pain consider one of the following:
 - a. **Toradol** 30 mg IV
 - b. **Morphine Sulfate** 2-10 mg IV or IM
 - c. **Fentanyl** 50 – 100 mcg IV or IM
4. For nausea, give one of the following:
 - a. **Zofran** 4 – 8 mg IV or IM
 - b. **Benadryl** 25-50 mg IV or IM

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



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2.7

Adult OB/GYN Emergencies



2.7.1 Childbirth – Complications

Purpose: This protocol outlines the specific treatment for complications to labor and delivery.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1.](#)
 - a. Secondary survey should include pertinent OB/GYN history:
 - Number of pregnancies/deliveries.
 - History of problems with pregnancy (vaginal bleeding, prior cesarean sections, high blood pressure, premature labor, premature rupture of membranes.
 - Last menstrual period and due date (if known).
 - Current complaints (onset of labor, timing of contractions, rupture of membranes, or urge to push.)
 - Past medical history (including medications.)
2. [Airway Assessment/Management Protocol 2.1.2.](#) Oxygen via nasal cannula.
3. Attach cardiac monitor and pulse oximeter.
4. Perineal examination (do not perform internal vaginal examination)
 - a. Vaginal bleeding or leakage of fluid.
 - b. Presence of meconium.
 - c. Crowning during a contraction.
 - d. Presenting part (head, face, foot, arm, cord.)
5. IF HEAVY VAGINAL BLEEDING WITH SIGNS OF SHOCK (SYS BP < 90 mm Hg)
 - a. Transport with patient in left lateral recumbent position.
 - b. Transport immediately, notify labor and delivery
 - c. **ALS LEVEL 1: Cardiac monitor.**
 - d. **ALS LEVEL 1: IV lactated Ringer's or normal saline Bolus as needed with two liters of IV fluid in 250 – 500 ml increments to maintain systolic BP > 90 mm Hg. Check vital signs frequently.**
6. IF CORD PROLAPSED:
 - a. Place mother on back with hips elevated (pillow under her hips) or place her in knee/chest position.
 - b. Do not attempt to push cord back. Wrap cord in sterile saline soaked dressing
 - c. With a gloved hand, palpate the cord for pulse.
 - d. If pulse is absent in umbilical cord, and positioning of mother does not restore pulse, insert sterile gloved index and middle fingers into the vagina and push the infant up to relieve pressure on the cord. With the other hand, press on the mother's lower abdomen in an upward and cephalic (towards head) direction.



Push the fetus back only far enough to regain a pulse in the umbilical cord.

- e. Transport and notify receiving hospital of impending arrival.
- 7. IF BREECH PRESENTATION:
 - a. Do not pull on the newborn. Allow the delivery to proceed normally, supporting the newborn with the palm of your hand and arm, and allowing the head to deliver.
 - b. If the head is not delivered within 3 minutes, place a gloved hand in the vagina with your palm towards the newborn's face. Form a "V" with your index finger and middle finger on either side of the newborn's nose and push the vaginal wall away from the newborn's face to create airspace for the newborn until delivery of the head. Suction may be provided PRN.
 - c. Transport immediately, while maintaining the airspace for the newborn.
- 8. IF LIMB PRESENTATION:
 - a. Place mother in either the knee-chest position or supine position with a pillow under the buttocks.
 - b. Transport immediately
- 9. IF SHOULDER DYSTOCIA:
 - a. Determine presence of shoulder dystocia as follows: head will deliver normally and then it will retract back into the perineum because the shoulders are trapped between the symphysis pubis and the sacrum (this is called "turtle sign").
 - b. If this occurs, Do Not pull on head
 - c. Have mother drop her buttocks off the end of the bed and flex her thighs upward to facilitate delivery.
 - d. Apply firm pressure with an open hand immediately above the symphysis pubis
 - e. If delivery does not occur, transport immediately

ALS LEVEL 1: PARAMEDIC ONLY

- 1. For any of the above complications do not delay transport. An IV in the mother is not necessarily going to help with any of the above complications except the heavy vaginal bleeding with signs of shock. Even then, any attempts at an IV should be done enroute to the hospital.
- 2. Monitor cardiac rhythm

ALS LEVEL 2: MEDICAL CONTROL

- 1. Contact medical control for any questions or problem



2.7.2 Childbirth – Normal Delivery

Purpose: This protocol is to guide the EMS crew with delivering a newborn. If during your evaluation or during the delivery itself, if any complications arise, refer to the Childbirth-complications protocol that follows.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1.](#)
 - a. Secondary survey should include pertinent OB/GYN history:
 - Number of pregnancies/deliveries.
 - History of problems with pregnancy (vaginal bleeding, prior cesarean sections, high blood pressure, premature labor, premature rupture of membranes.
 - Last menstrual period and due date (if known).
 - Current complaints (onset of labor, timing of contractions, rupture of membranes, or urge to push.)
 - Past medical history (including medications.)
2. [Airway Assessment/Management Protocol 2.1.2](#) Oxygen via nasal cannula.
3. Attach cardiac monitor and pulse oximeter.
4. Perineal examination (do not perform internal vaginal examination)
 - Vaginal bleeding or leakage of fluid.
 - Presence of meconium.
 - Crowning during a contraction.
 - Presenting part (head, face, foot, arm, cord.)
5. If active labor, and no vaginal bleeding or crowning:
 - a. Check for fetal heart tones.
 - b. Transport.
6. If active labor, no crowning and vaginal bleeding with no signs of shock (systolic >90 mm Hg):
 - a. Transport.
 - b. **ALS LEVEL 1: IV lactated Ringer's or normal saline at 100 ml/hour.**
 - c. **ALS LEVEL 1: Cardiac monitor.**
7. If imminent delivery:
 - a. Place mother in lithotomy position.
 - b. Drape mother.
 - c. Prepare for neonatal resuscitation.
 - d. Assist delivery. Gently and carefully assist expulsion of the newborn from the birth canal in its natural descent. Do not pull or push the newborn.
 - e. Suction mouth and then nose with bulb suction (if meconium stained fluid, suction baby's airway until clear before stimulating first breath) after head delivers and before torso delivers.



- f. Check for cord around neonate's neck when head is visible and after suctioning. If present, carefully unwrap the cord from the neck. If unable to remove the cord, apply 2 umbilical clamps and cut between the clamps to release the cord (careful not to injure the newborn). Once airway is clear and cord is free from around neck, instruct mother to push on her next contraction to complete delivery.
- g. Upon complete delivery of the newborn:
 - ✓ Keep the newborn at the level of the vagina to prevent over or under transfusion of the blood from the cord
 - ✓ Clear mouth and nose p.r.n. with gentle suction using bulb syringe
 - ✓ Clamp cord in two places (if not done as described above to free cord from around neck) approximately 8" and 10" from neonate. Cut cord between clamps
 - ✓ Warm, dry, and stimulate infant.
 - ✓ Wrap infant in sterile drape or dry blanket. Be sure to cover the newborn's head, as this is a major source of heat loss.
 - ✓ Check vitals: if compromised, initiate resuscitation
- h. Evaluate Newborn:
 - ✓ Note time of delivery and [APGAR](#) scores at birth and five minutes
 - ✓ If newborn is not breathing or APGAR < 7 see [Newborn Resuscitation Protocol](#).

ALS LEVEL 1: PARAMEDIC ONLY

- 1. Infuse mother with IV of lactated Ringer's or normal saline at 125 ml/hour.
- 2. If excessive maternal bleeding, massage uterus gently
- 3. Transport, do not wait to deliver placenta. Do not pull on the umbilical cord.
- 4. If delivery completed before arrival, or in-field:
 - a. Protect infant from fall and temperature loss.
 - b. Check infant's vital signs (perform CPR or assist ventilations as necessary.)
 - c. Clamp cord in two places, six inches from infant, and cut cord between clamps.
 - d. Suction, warm, dry, and stimulate infant.
 - e. Give infant to mother.
 - f. Massage uterus gently.
 - g. Do not pull on cord or attempt to deliver placenta.
 - h. Transport.

ALS LEVEL 2: MEDICAL CONTROL

- 1. Contact medical control or medical director for any questions or problems.



2.7.3 Vaginal Bleeding (NON-TRAUMATIC)

Purpose: This protocol should be used for female patients who may or may not be pregnant that present with non-traumatic vaginal bleeding. Examples of causes include: ante-partum hemorrhage (abruption placenta, placenta previa and uterine rupture), post-partum hemorrhage, ruptured ectopic pregnancy, ruptured ovarian cyst, spontaneous abortion, etc.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Place all products of delivery (undeveloped fetus, placenta, etc) in a plastic bag and transport with patient to hospital. Do not discard any products on scene. If irretrievable, document the reason and contact supervisor or medical director prior to leaving the scene.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any problems or concerns.



2.7.4 Eclampsia/ Pre-Eclampsia

Purpose: This protocol should be used for the patient in her second or third trimester of pregnancy (≥ 20 weeks gestation) that is exhibiting signs of pre-eclampsia or eclampsia. The signs of toxemia include proteinuria (dark colored urine), excessive weight gain, and hypertension. The presence of two of these signs constitutes pre-eclampsia and all three constitutes eclampsia. The seizing patient in her third trimester of pregnancy should be assumed to be eclamptic and treated as specified below. Eclamptic seizures can also occur postpartum (≤ 1 week). Witnessed continuous convulsions (generalized tonic-clonic seizure or Grand Mal) or repeating episodes without regaining consciousness or sufficient respiratory decompensation demonstrates a need for immediate treatment.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq 94\%$ (non-rebreather @15 LPM if SpO₂ < 90%)
3. Attach cardiac monitor and pulse oximeter

ALS LEVEL 1: PARAMEDIC ONLY

1. Establish IV of lactated Ringer's or normal saline at 125 ml/hr.
2. Determine serum glucose level with Glucometer or DextroStix.
 - a. If glucose <80mg/dl:
 - i. If sugar 60 mg/dl - 80 mg/dl; Sublingual **Glucose Paste**, or **Glucagon 1mg IM** or ½ amp of 25gm **50% Dextrose** IV. Give 2nd half of the D50W amp if glucose still < 80 mg/dl when glucose rechecked in 5 minutes
 - ii. If Blood sugar < 60 mg/dl; 1 amp 25gm **50% Dextrose** IV or **Glucagon 1 mg IM**
3. If glucose is given, give **Thiamine** 100 mg IV or IO
4. If seizing: give **Magnesium Sulfate** 4 gm IV or IO (mixed in 50 ml of D5W given over 5 – 10 minutes). May repeat once at 2 gm IV or IO (mixed in 50 ml of D5W given over 5 – 10 minutes) PRN. Remember, magnesium sulfate can cause respiratory depression with cardiovascular collapse. If patellar reflexes are absent, shut off the infusion and contact medical control immediately. Antidote is **calcium chloride** IV over 5 minutes.
5. If patient continues seizing, administer one of the following:
 - a. **Diazepam (Valium)** 5 - 10 mg IV or IO (if unable to start IV or IO give Valium 10mg per rectum). May repeat PRN up to 20 mg maximum dose. Monitor respiratory status and intervene as needed.
 - b. **Midazolam (Versed)** 2mg IV or IO. May repeat once PRN (4 mg maximum dose)
6. Monitor EKG, vital signs, fetal heart tones, level of consciousness, patellar reflexes, respiratory rate, and oxygenation status every 5 minutes.



7. Keep the patient in left lateral recumbent position.
8. Evaluate for pulmonary edema. If present, apply **CPAP** per protocol.
9. If patient seized and transport time is > 20 min, administer **Magnesium Sulfate** maintenance infusion. Place 10 grams of **magnesium sulfate** (20 ml of 50% solution) in 250 ml of LR or NS and infuse at 50 ml/hr (2 grams/hr).

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.
2. If patient is in third trimester and is hypertensive (systolic > 140 mm Hg or diastolic > 90 mm Hg) especially with no prior history of hypertension, call for order of **Labetalol 10mg IV then 5 – 10 mg** increments for desired effect



2.7.5 Pre-Term Labor

Purpose: This protocol will be used during intra-facility transfers. On occasion a patient in pre-term labor will need to be transferred to a higher level of care. The transferring physician will have determined that the benefits outweigh the risk to the patient and should have initiated the proper EMTALA transfer paperwork. The key to this type of transfer is for the transferring physician to have done everything possible to arrest the labor process prior to EMS leaving with the patient. EMS should only have to continue the care and medications initiated by the transferring hospital. If the patient is ≤ 20 weeks gestation then there is very little chance of delivering a viable fetus. EMS should not transfer a patient in active labor as care for the fetus by the physician at the hospital is better than what can be provided by a paramedic in back of an ambulance (or in an aircraft) with little resources and the need to provide care for the mother as well. A neonatal team can then respond to the transferring hospital with specialty equipment to manage the neonate.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq 94\%$ (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter

ALS LEVEL 1: PARAMEDIC ONLY

1. Confirm with transferring physician that patient is NOT in active labor.
2. IV fluids should already be in progress per the hospital. If so, continue at the rate ordered by the transferring physician. If not initiate IV lactated Ringer's or Normal Saline at 100ml/hr. Consider fluid bolus as initial tocolytic therapy. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
3. Record frequency, character and duration of contractions, fetal heart tones, blood pressure, and pulse every 15 minutes.
4. Patient may be on one of the following tocolytics as ordered by transferring MD. Must be on an IV pump.
 - a. [Magnesium Sulfate](#) 4 – 6 gms IV over 20 min. Then 2- 4 g / hr x 12- 24 hr.
 - b. [Brethine \(terbutaline\)](#) 0.25mg SUB-Q q 30 min. (Max: 1mg/4h); or 2.5- 10 mcg/min IV up to max of 17.5- 30 mcg/min.

ALS LEVEL 2: MEDICAL CONTROL

1. Notify medical control or medical director for any problems or concerns.



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2.8

Other Adult Medical Emergencies



2.8.1 Allergic Reactions (ANAPHYLAXIS)

Purpose: This protocol is to be used for patients who may be experiencing and allergic reaction. The reaction could be triggered by a contact with some object or substance, something ingested or something injected beneath the skin (sting, bite, IM, IV, or SubQ medication or chemical, etc). The reaction could range from a mild irritation and/or itching (with or without a rash) of a localized area of the skin/body to a full-blown anaphylactic reaction with respiratory and cardiovascular collapse.

Signs and symptoms consistent with allergic reaction:

- Skin – flushing, itching, hives, swelling, cyanosis.
- Respiratory – dyspnea, sneezing, coughing, wheezing, stridor, laryngeal edema, laryngospasm, bronchospasm.
- Cardiovascular – vasodilatation, increased heart rate, decreased blood pressure
- Gastrointestinal – nausea/vomiting, abdominal cramping, diarrhea
- CNS - dizziness, headache, convulsions, tearing

Treatment is outlined according to the severity of the allergic reaction (mild, moderate, and severe or anaphylaxis).

Procedure:

MILD REACTIONS (redness and/or itching, hives, stable vital signs with a systolic BP > 110 mm Hg without dyspnea)

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol \(O₂ PRN\) 2.1.2](#)
3. Attach cardiac monitor and pulse oximeter.
4. Transport to designated hospital.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV of lactated Ringer's or normal saline at TKO.
2. [Diphenhydramine HCL \(Benadryl\)](#) 25-50mg IV or IM (Peds; 1-2 mg/kg IV or IM)
3. [Ranitidine \(Zantac\)](#) 150 mg PO if able to swallow.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any concerns or help

MODERATE ALLERGIC REACTIONS: (edema, hives, dyspnea, wheezing, “lump in throat” feeling, difficulty swallowing, facial swelling and stable vital signs with a systolic BP > 90 mm Hg)

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#)
3. Attach cardiac monitor and pulse oximeter.
4. Transport to designated hospital.

ALS LEVEL 1: PARAMEDIC ONLY

Adult Protocols



1. Initiate IV of lactated Ringer's or normal saline at 70cc/hr.
2. Diphenhydramine HCL (Benadryl) 25-50 mg IV or IM (Peds; 1-2 mg/kg IV or IM)
3. Ranitidine (Zantac) 150 mg po (peds dose 2 mg/kg po)
4. Methylprednisolone Sodium Succinate (Solu-Medrol) 125mg IV
5. Epinephrine (1:1000) 0.4 ml IM Adult (Pedi: 0.01 ml/kg.) Caution should be used with administration of Epinephrine when the patient has a history of hypertension or heart disease (call med control if you have any concerns)
6. **IF** patient is on a Beta Blocker medication, give Glucagon 2 mg IV over 2-5 minutes. If you are not sure which drugs is a beta blocker, contact medical control to discuss.
7. If patient shows signs of respiratory distress give; Albuterol (Ventolin) 2.5mg mixed with 2.5ml of normal saline nebulizer treatment. May repeat twice PRN
8. Add Atrovent (Ipratropium Bromide) 0.5mg to the first Albuterol nebulizer treatment only

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any concerns or help

SEVERE ALLERGIC REACTION/ANAPHYLAXIS (edema, hives, severe dyspnea and wheezing, unstable vital signs with systolic BP < 90 mm Hg, and possible cyanosis and laryngeal edema)

BASIC LEVEL: EMT and PARAMEDIC

1. Initial Patient Assessment Protocol 2.1.1
2. Airway Assessment/Management Protocol 2.1.2
3. Attach cardiac monitor and pulse oximeter.
4. Transport to designated hospital.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV of lactated Ringer's or normal saline bolus with 250 ml prn up to 1 liter (reassess vitals and respiratory status between each bolus) then rate of 125cc/hr. (Bolus children with 20ml/kg then 40cc/hr)
2. Diphenhydramine HCL (Benadryl) 25-50mg IV or IM (Peds; 1-2 mg/kg IV or IM)
3. Ranitidine (Zantac) 150 mg po (peds dose 2 mg/kg po)
4. Methylprednisolone Sodium Succinate (Solu-Medrol) 125mg IV
5. Epinephrine (1:1000) 0.4 ml IM Adult (Peds: 0.01 ml/kg.) Caution should be used with administration of Epinephrine when the patient has a history of hypertension or heart disease (call med control if you have any concerns)
6. **IF** patient is on a Beta Blocker medication, give Glucagon 2 mg IV over 2-5 minutes. If you are not sure which drugs are beta blockers, contact medical control to discuss?
7. If patient shows signs of respiratory distress give; Albuterol (Ventolin) 2.5mg mixed with 2.5ml of normal saline nebulizer treatment. May repeat twice PRN



8. Add Atrovent (Ipratropium Bromide) 0.5mg to the first Albuterol nebulizer treatment only
9. If the nebulized treatments do not significantly resolve the respiratory distress,
10. Consider need for intubation

ALS LEVEL 2: MEDICAL CONTROL

1. Epinephrine (1:10,000) 0.3 mg SLOW IV in 0.1 mg increments over 2 minutes. Caution should be used with administration of Epinephrine when the patient has a history of hypertension or heart disease
2. For refractory hypotension obtain order for Dopamine drip starting at 5 mcg/min and titrate to effect. Dopamine infusion @ 5-20 mcg/kg/min (1600 mcg/ml infusion concentration = 15 – 16 gtt/min). Titrate to maintain a minimum systolic BP of 90 mm Hg with good capillary refill or a maximum BP of 120 mm Hg (maximum dose 20 mcg/kg/min)



2.8.2 Diabetic Emergencies (Hypo and Hyper-glycemic)

Purpose: This protocol is used for diabetic patients with blood sugars below 80 mg/dl or blood sugars over 250 mg/dl. Keep in mind that low or elevated blood sugars (in diabetics) can be affected by medications, infections, stress, alcohol, etc.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%)
3. Attach cardiac monitor and pulse oximeter

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV of Lactated Ringer's or normal saline at 125ml/hr. Draw tube of blood (if tubes are available label the pre-treatment blood vial and provide it to the receiving hospital with the patient.). If patient is tachycardic (HR > 110) and/or hypotensive (systolic BP < 90 mm Hg), bolus with 1 – 2 liters of IV fluid in 250 ml increments with vital sign recheck and lung exam between each increment. Discontinue bolus if HR slow < 110, systolic BP > 90 or if signs of pulmonary edema. If no sign/symptoms of pulmonary edema, resume rate at 125 ml/hr. If no IV access, consider an IO ONLY if patient is seriously ill (hypotensive and tachycardic). Do not place IO simply for high or low blood sugar when patient is otherwise stable.
2. Determine serum glucose level with Glucometer or DextroStix.
If glucose <80mg/dl and patient is:
Asymptomatic (No headache, nausea and/or altered mental status):
 - **If sugar 60 mg/dl – 80 mg/dl;** No emergency treatment (OK for patient to drink a cola, juice or other oral form of glucose they may have with them.
 - **If sugar < 60mg/dl;** Oral glucose (juice, piece of candy, or sublingual glucose)Symptomatic (Headache, nausea, and/or altered mental status):
 - **If sugar 60 mg/dl - 80 mg/dl;** Sublingual glucose paste, or Glucagon 1mg IM, or ½ amp of 25gm 50% Dextrose IV. Give 2nd half of the D50W amp if glucose still < 80 mg/dl when glucose rechecked in 5 minutes.
 - **If Blood sugar < 60 mg/dl;** 1 amp 25gm 50% Dextrose IV or Glucagon 1 mg IM
3. **If glucose > 80 mg/dl and < 250 mg/dl**, no specific treatment, supportive care
4. **If glucose > 250 mg/dl**, and patient exhibiting altered mental status, Kussmaul respirations, dry skin with poor turgor, and/or ketotic breath:
 - Bolus with 1 – 2 liters of IV fluid in 250 ml increments with vital sign recheck and lung exam between each increment. Discontinue bolus if signs of pulmonary edema.

Adult Protocols



- Asymptomatic patients with glucose > 250 mg/dl, just give IV fluids at 125ml/hr.
- 5. If patient appears malnourished or is a chronic alcoholic, give Thiamine 100mg IV

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.8.3 Abdominal Pain (NON-TRAUMATIC)

Purpose: This protocol should be used for patients that complain of abdominal pain without a history of trauma. Assessment should include specific questions pertaining to the GI/GU systems. See [Abdominal Pain Differential](#) in Appendix

Abdominal physical assessment includes:

Asking patient to point to area of pain (palpate this area last)

Gently palpate for tenderness, rebound tenderness, distention, rigidity, guarding, and pulsatile masses. Also palpate the flank area for CVA tenderness.

Abdominal History Includes:

- ☐ Hx of pain (OPQRST)
- ☐ Hx of nausea/vomiting (color, bloody, coffee grounds)
- ☐ Hx of bowel movement (last BM, diarrhea, bloody, tarry)
- ☐ Hx of abdominal surgery
- ☐ Hx of acute onset of back pain
- ☐ SAMPLE (attention to last meal)

Additional questions should be asked of the female patient regarding OB/GYN history. All female patients of childbearing age complaining of abdominal pain should be considered to have an ectopic pregnancy (even if vaginal bleeding is absent) until proven otherwise.

Non-traumatic abdominal pain can be caused by: appendicitis, cholecystitis, duodenal ulcer perforation, diverticulitis, abdominal aortic aneurysm, pelvic inflammatory disease (PID), pancreatitis, mesenteric ischemia, renal stones, hepatitis, cirrhosis of the liver, bowel obstruction, gastroenteritis, etc.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#)
3. Attach cardiac monitor and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV of lactated Ringer's or normal saline at TKO. If patient is tachycardic and/or hypotensive, give a 250 ml bolus. May repeat bolus for total of 2 liters of IV fluid. Assess vital signs and breath sounds in-between each bolus. If vital signs respond to the bolus(s) (pulse rate slowed down and/or blood pressure improved) run at 100cc/hr. If still hypotensive/tachycardic cautiously bolus a second liter in 250ml increments.
2. If patient is nauseated, give one of the following:
 - a. [Ondansetron \(Zofran\)](#) 4 – 8 mg IV or IM (If oral form available, give sublingual)
 - b. [Diphenhydramine \(Benadryl\)](#) 25-50 mg IV or IM

ALS LEVEL 2: MEDICAL CONTROL

1. This is one of the times you will need medical control for pain medication orders.





2.8.4 Sickle Cell Anemia

Purpose: This protocol is for patients with a history of Sickle Cell Disease. Sickle cell anemia is a chronic hemolytic anemia occurring almost exclusively in African-Americans and is characterized by sickle-shaped red blood cells. Sickle cell crisis results from the occlusion of a blood vessel by masses of sickle-shaped red blood cells. Pain is the principle manifestation, and this represents the most common type of crisis. Typical pain occurs in the joints and back. Hepatic, pulmonary, or central nervous system involvement can occur, each with its own group of symptoms. Keep in mind that patients with sickle cell disorder have a high incidence of life-threatening disorders at a very young age.

Procedure:**BASIC LEVEL: EMT and PARAMEDIC**

1. Initial Patient Assessment Protocol 2.1.1
2. Airway Assessment/Management Protocol 2.1.2. Oxygen via nasal cannula @ 2 - 4 LPM (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter pm

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline. Give a fluid challenge of 500 ml then set rate at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
2. If systolic BP > 90 mm Hg give one of the following:
 - a. Toradol 30 mg IV or 60 mg IM (if patient is > 65 y/o limit dosage to 15mg IV or 30mg IM). After 30 minutes, the IV dose can be repeated x 1 PRN.
3. If nausea also present from pain or the pain medication give one of the following;
 - a. Zofran 4 – 8 mg IV or IM
 - b. Benadryl 25 mg IV or IM

ALS LEVEL 2: MEDICAL CONTROL

- a. Fentanyl 50 – 100 mcg IV or IM

OR

- b. Morphine 2 – 10 mg IV or IM

Notify medical control of any problems or concerns.



2.8.5 Alcohol Emergencies

Purpose: This protocol is to be used on patients who are suspected of being intoxicated with alcohol. Treat all intoxicated patients with respect even though they may be agitated and potentially violent. Just because you can smell ETOH on or around your patient, you **MUST** consider other possible causes for a patient's abnormal behavior or altered mental status, such as head injury from trauma, co-ingestion of drugs, low blood sugar, severe hypoxia (including carbon monoxide poisoning).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#)
3. Attach cardiac monitor and pulse oximeter.
4. Alcoholics with any evidence of head trauma and altered mental status must be considered to have a closed head injury until proven otherwise. Treat them as such including C-spine precautions.
5. Notify law enforcement for assistance with any combative or uncooperative alcoholic with an altered mental status.
6. Transport to designated hospital.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV of lactated Ringer's or normal saline at TKO. If patient is tachycardic and/or hypotensive, give a 250 ml bolus then run at 100cc/hr.
2. Determine serum glucose level with Glucometer or Dextrostix
 - a. If sugar 60 mg/dl - 80 mg/dl; **Sublingual glucose paste, or [Glucagon](#) 1mg IM or ½ amp of 25gm [50% Dextrose IV](#)**
 - b. If Blood sugar < 60 mg/dl; 1 amp **25gm [50% Dextrose](#) IV or [Glucagon](#) 1 mg IM**
3. If history of drug abuse, and patient has constricted pupils or respiratory depression, assist respirations as needed and administer [Narcan](#) 1-2 mg IV
4. If history suspicious for alcoholism, administer [Thiamine](#) 100 mg IV (slow) or IM.

ALS LEVEL 2: MEDICAL CONTROL

1. **Contact Medical Control or Medical Director for any questions or problems.**



2.8.6 Dehydration

Purpose: This protocol is for patients who have been unable to keep themselves sufficiently hydrated due to a decrease p.o. intake (inadequate intake to keep up with the fluid/metabolic demands of the body) or increase loss of water/electrolytes from the body from such conditions as vomiting, diarrhea, excessive sweating, burns. Other conditions can lead to dehydration such as DKA (diabetic ketoacidosis), metabolic acidosis, serious infections, high fever, etc. Signs and symptoms may include: hot, very dry skin, poor skin turgor, dry mucus membranes, little or no moisture in eyes, sunken appearance of the eyes in the socket, tachycardia, and hypotension.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1.](#)
2. [Airway Assessment/Management Protocol 2.1.2.](#)
3. Attach cardiac monitor and pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1 liter of IV fluid in 250ml increments until systolic BP > 90 mm Hg. Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or respiratory distress develop.
2. Monitor cardiac rhythm and vital signs
3. Determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 25gm [50% Dextrose](#) IV or [Glucagon](#) 1mg IM or Sublingual glucose paste, may repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm [50% Dextrose](#) IV or [Glucagon](#) 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to Hyperglycemia Protocol 2.8.2.
4. If patient has a history of malnutrition or alcohol abuse give [Thiamine](#) 100mg IV.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.



2.8.7 Motion Sickness

Purpose: This protocol is for patients who may become ill with nausea, vomiting and/or dizziness due to motion sickness during a long transport. This may develop or be aggravated by the rear facing position in back of the ambulance or on an aircraft. Inquire if patient has a history of motion sickness.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. Initial Patient Assessment 2.1.1
2. Assure ABCs are stable. Position of comfort
3. Airway Assessment/Management Protocol 2.1.2. Oxygen if indicated via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq 94\%$ (non-rebreather @15 LPM if SpO₂ < 90%).
4. Attach cardiac monitor and pulse oximeter if indicated
5. Provide appropriate comfort measures (i.e. cool cloth to forehead).

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV of lactated Ringer's at 125 ml/hr. Give 250 ml fluid bolus if systolic pressure < 90 mm Hg (20 ml/kg for children).
2. Be alert for dysrhythmias.
3. If patient nauseated or has recently vomited, administer one of the following:
 - a. Zofran 4 – 8 mg IV or IM
 - b. Benadryl 25-50 mg IV or IM.
4. If patient complains of dizziness or motion sickness, consider administering:
 - a. Valium 2-10 mg IV
 - b. Versed 2 – 4 mg IV

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.8.8 Nausea and Vomiting

Purpose: Use this protocol for patients who are nauseated and vomiting due to their illness, pain, side effect of medications, etc. If the patient's nausea and vomiting is associated with an altered mental status or a seriously ill appearance, consider the cause to be a decompensation of their medical problem such as DKA (if diabetic)

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol](#)
2. [Airway Assessment/Management Protocol](#). If indicated, Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox at $\geq 94\%$ (non-rebreather @15 LPM if $SpO_2 < 90\%$).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Provide appropriate comfort measures (i.e. cool cloth to forehead).

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
2. If patient nauseated or has recently vomited, administer one of the following:
 - a. [Zofran](#) 4 – 8 mg IV or IM (or the ODT Tablet sublingual if available)
 - b. [Benadryl](#) 25-50 mg IV or IM.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.8.9 Hyperkalemia (Elevated Potassium)

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Purpose:

This protocol is to be used on patients with dangerously elevated levels of potassium (>7 mmol/L or $6-7$ mmol/L with EKG changes). Potassium is an extremely important electrolyte and is involved in maintaining electrical potential across cell wall membranes. It is essential to the normal function of cardiac cells. Potassium levels can elevate for a variety of reasons, including but not limited to; problems with excretion (renal 90%, GI 10%), potassium distribution (Extracellular 2%, intracellular 98%), increased absorption/intake. Normal serum potassium levels range from 3.5 – 5 mmol/L.

Signs and symptoms of elevated potassium levels include but are not limited to:

1. Weakness that can progress to paralysis,
2. Dyspnea (owing to respiratory muscle weakness)
3. EKG findings of peaked T wave, prolonged pr interval, widening of QRS complex and eventual sinusoidal wave form

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol \(O₂ PRN\) 2.1.2](#)
3. Attach cardiac monitor and pulse oximeter.
4. Transport to designated hospital

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
2. Perform 12 lead ECG.
 - a. Look for peaked T-wave, prolonged P-R interval, Widened QRS complexes, bradycardia
 - b. As potassium elevates further, EKG may show dropped P waves, very wide QRS (sinusoid wave form)
 - c. Transmit 12 Lead ECG to destination hospital, if available. If inferior wall MI is identified (ST segment elevation in leads II, III, and AVF), perform additional 12 Lead ECG with V4R to confirm/rule out concurrent right ventricular MI.
3. If EKG suggest hyperkalemia or patient is very weak (and is a renal patient or taking potassium supplements), measure serum potassium if equipment available (I-STAT), or obtain value (if it's been within two hours) from record at transferring facility. If level is > 7 mmol/L or $6-7$ with EKG changes proceed to next step. If EKG changes suggesting elevated potassium levels after Succinylcholine was administered for RSI, proceed to next step

Adult Protocols



4. Give one amp (if available) of **Calcium Gluconate (or Calcium Chloride)** IV over 1 – 3 minutes. Give only if EKG changes. Avoid if suspect Digoxin toxicity.
5. Give **Albuterol** (only) via neb x 1
6. Give **Sodium Bicarb** 1 amp IV
7. Notify the hospital as additional treatment will be needed on arrival such as
 - d. Reg Insulin and D50W
 - e. Kayexcelate PO
 - f. Possible dialysis

ALS LEVEL 2: MEDICAL CONTROL

1. Notify medical control or medical director for any problems or concerns.



2.8.10 Dystonic Reaction

Purpose:

This protocol is to be used to treat patients who are experiencing extra-pyramidal or dystonic reactions related to side effects of certain drugs (phenothiazine, anti-psychotic, neuroleptic). Dystonia is prolonged involuntary muscular contractions that may cause twisting (torsion) of body parts, repetitive movements, and increased muscular tone. Patients head may be twisted to one side due to uncontrolled muscle spasms of the neck. Patient may have abnormal movement or position of tongue due to spasm of the tongue muscle. This may also cause the patient with difficulty speaking. Patient's eyes may also be deviated to one side.

Common medications that can cause acute dystonic reaction:

Generic Name	Trade Name	General Use
Prochlorperazine	Compazine	Antiemetic, migraine headache
Hydroxyzine	Vistaril, Atarax	Antiemetic, antipruritic
Promethazine	Phenergan	Antiemetic, antipsychotic
Haloperidol	Haldol	Antipsychotic, Tourette's syndrome
Thioridazine	Mellaril	Antipsychotic
Alprazolam	Xanax	Antianxiety
Metoclopramide	Reglan	Antiemetic
Droperidol	Inapsine	Antiemetic, antipsychotic
Fluphenazine	Prolixin	Neuralgia, antipsychotic

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol \(O₂ PRN\) 2.1.2](#)
3. Attach cardiac monitor and pulse oximeter.
4. Transport to designated hospital
5. Keep in mind, until patient is treated, he/she may be able to hear and understand you but will not be able to follow commands.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV of lactated Ringer's or normal saline at TKO. If patient is tachycardic and/or hypotensive, give a 250 ml bolus then run at 100cc/hr.
2. Determine serum glucose level with Glucometer or Dextrostix
 - a. If sugar 60 mg/dl - 80 mg/dl; **Sublingual glucose paste, or [Glucagon](#) 1mg IM or ½ amp of 25gm [50% Dextrose IV](#)**
 - b. If Blood sugar < 60 mg/dl; 1 amp **25gm [50% Dextrose IV](#) or [Glucagon 1 mg IM](#)**

Adult Protocols



3. If patient exhibiting signs and symptoms of dystonic reaction (extrapyramidal side effect) from one of the common medications listed above, give Benadryl (Diphenhydramine) 25 – 50 mg IV or IM
4. If history of drug abuse, and patient has constricted pupils or respiratory depression, assist respirations as needed and administer Narcan 1 -2 mg IV

ALS LEVEL 2: MEDICAL CONTROL

1. **Contact Medical Control or Medical Director for any questions or problems.**



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2.9

Adult Environmental Emergencies



2.9.1 Diving (Scuba) Emergencies/Barotrauma (Decompression Sickness)

Purpose: This protocol is for patients who suffer the effects of sudden changes in atmospheric pressure due to diving related activity. Barotrauma and decompression illness is caused by changes in the surrounding atmospheric pressure beyond the body's capacity to compensate for excess gas load. These injuries are most commonly associated with the use of SCUBA (Self-Contained Underwater Breathing Apparatus). SCUBA diving emergencies can occur at any depth with the most serious manifesting symptoms after a dive. It should be understood that if a patient took a breath underwater, from any source of compressed gas (e.g. submerged vehicle, SCUBA, etc) while greater than 3 feet in depth, the patient might be a victim of barotrauma. Barotrauma may cause several injuries to occur including: arterial gas embolism (AGE), pneumothorax, pneumomediastinum, subcutaneous emphysema, and the "Sub-Queueze." decompression illnesses may also include decompression sickness ("Bends").

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1.](#)
2. [Airway Assessment/Management Protocol 2.1.2.](#) Administer Oxygen via non-rebreather @15 LPM
3. Attach cardiac monitor and pulse oximeter
4. Place the patient in a supine head-down left lateral decubitus position.
5. Complete the [Dive Accident Signs and Symptoms Checklist](#) and [Rapid Field Neuro Exam Record](#) (see appendix)
6. Start [Dive History Profile](#) (see blank forms), if possible (the patient's dive buddy may be helpful in answering many of these questions)
7. Protect against hypothermia and hyperthermia.
8. If applicable, have the local legal authority in charge secure all of the victims dive gear with proper chain of custody for testing, analysis, etc.
9. Monitor closely for complications (pneumothorax, shock, seizures) and treat per protocols.
10. Transport to the closest Emergency Department or Trauma Center. If transporting by helicopter, fly below 1000 feet (if traveling by fixed wing, request pilot pressurize the cabin to sea level). If applicable and pre-arranged agreement exists, consider transport to a hyperbaric facility. Provide hyperbaric personnel with a detailed history of the dive (depth and duration, timing and onset of symptoms, complications, and any treatment rendered).
11. **Contact Diver's Alert Network (DAN) at Duke University Medical Center at (919) 684-4326** for assistance as needed for further assistance.
12. Bring Dive Computer to the hospital, if available

ALS LEVEL 1: PARAMEDIC ONLY

1. Start an IV of lactated Ringer's or normal saline TKO.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.9.2 Cold Related Emergencies/Hypothermia/Frostbite

Purpose: This protocol is to be used for patients who suffer from hypothermia. Factors that predispose and/or cause a patient to develop hypothermia include: geriatric and pediatric patients, poor nutrition, diabetes, hypothyroidism, brain tumors or head trauma, sepsis, use of alcohol and certain drugs, and prolonged exposure to water or low atmospheric temperature. Hypothermia patients can be divided into three categories: Mild (temperature 94-96 degrees F), Moderate (Temperature 86 – 94), and Severe (Temperature < 86 degrees F). It should be noted that most oral thermometers would not register below 96 degrees F. There are some newer digital thermometers that will register lower temperatures.

Frostbite is local tissue freezing.

Mild to Moderate Hypothermia: Patients will generally present with shivering, lethargy.

Severe Hypothermia: Patients may be disoriented and confused to stupor and coma. Shivering usually stops and physical activity will be uncoordinated. In addition, severe hypothermia will frequently produce an Osborn J wave on an ECG, as well as dysrhythmias (bradycardia, ventricular fibrillation).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter
4. Remove all wet clothes and dry patient.
5. Protect from heat loss and wind chill.
6. Maintain in a horizontal position
7. Check core temperature if possible
8. Frost Bite cases:
 - a. Protect injured areas from pressure, trauma, and friction. Bandage with dry sterile dressing if able.
Do not rub or break blisters.
 - b. Do not allow limb to thaw if there is a chance it will re-freeze.
 - c. Do not allow patient to ambulate once the limb has started to thaw.
 - d. Maintain core temperature by keeping victim warm with blankets.
 - e. Warm fluids may be administered orally to conscious patients.
 - f. Consider using the pulse oximeter probe to detect peripheral perfusion in affected tissues.

ALS LEVEL 1: PARAMEDIC ONLY

- 1) If severe pain, give [Morphine](#) 2-10 mg IM or IV, or [Fentanyl](#) 50 – 100 mcg IM or IV, for pain control.



Mild to moderate (86 - 96°): Hx of exposure to cold, altered LOC, shivering, muscle stiffness, stumbling or staggering gait, cool or cold skin, mottled or pale skin;

BASIC LEVEL: EMT and PARAMEDIC

1. Warm humidified oxygen 12-15 L/M by non-re-breathing mask. Maintain pulse ox > 95%
2. Remove wet garments
3. Cover with blankets
4. Gentle handling
5. Warm environment
6. If patient has normal LOC may give warm fluids to drink

ALS LEVEL 1: PARAMEDIC ONLY

1. Large bore IV, warm saline at 75cc/hr
2. If altered mental status, determine serum glucose level with Glucometer or Dextro Stix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 25gm 50% Dextrose IV or Glucagon 1mg IM or Sublingual glucose paste, may repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm 50% Dextrose IV or Glucagon 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to Hyperglycemia Protocol 2.8.2.

Severe with vital signs present (<86°F): Same as mild to moderate but may not have shivering. Should have altered LOC and difficult to detect but present vital signs:

BASIC LEVEL: EMT and PARAMEDIC

1. Same as above
2. NPO

ALS LEVEL 1: PARAMEDIC ONLY

1. Same as above

Severe with absence of vital signs: Same as above but will be unresponsive with no detectable pulse or respirations:

BASIC LEVEL: EMT and Paramedic

1. Warm humidified oxygen by BVM
2. CPR
3. Gentle handling
4. Warm environment as much as possible



ALS LEVEL 1: PARAMEDIC ONLY

1. Intubate and ventilate with warm humidified oxygen, if possible
2. Cardiac Monitor: If V-FIB: defibrillate up to 3 times (200J, 300J, 360J);
If biphasic Zoll defibrillator 120J, 150J, 200J; (Peds = 2J/kg, 4J/kg, 4J/kg)
3. Medication therapy may be ineffective due to the decrease in core temperature. Usually meds withheld till core temp warmed to >86°F. Just continue CPR till temp > 86° F. If temp > 86° F, follow appropriate dysrhythmia protocol.
4. Large bore IV or IO, warm saline at 75cc/hr

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.9.3 Heat Related Emergencies/Hyperthermia

Purpose: This protocol is for patients suffering the effects of hyperthermia. Hyperthermia occurs when the patient is exposed to increased environmental temperature and can manifest as heat cramps, heat exhaustion, or heat stroke. Certain drugs may cause an increase in the body's temperature (e.g. cocaine, ecstasy, certain psychiatric medications, etc.). Heat related injuries can be divided into one of the following;

Heat Cramps: Signs and symptoms include: muscle cramps in extremities and/or abdomen, hot sweaty skin, weakness, dizziness, tachycardia, normal BP, and normal temperature

Heat Exhaustion: Signs and symptoms include: cool and clammy skin, profuse sweating, nausea/vomiting, diarrhea, tachycardia, weakness, dizziness, transient syncope, muscle cramps, headache, positive orthostatic vital signs, normal or slightly elevated temperature.

Heat Stroke: Signs and symptoms include: Hot dry skin (sweating may be present), confusion and disorientation, rapid bounding pulse followed by slow weak pulse, hypotension with low or absent diastolic reading, rapid and shallow respirations (which may later slow), seizures, coma, elevated temperature above 105° F.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter
4. Assess vital signs, including temperature, every 10 minutes.
5. Remove from warm environment and cool patient
6. For mild to moderate heat cramps and heat exhaustion, if patient is conscious and alert, encourage patient to drink water, follow by salt containing fluids (e.g. half-strength Gatorade or 10 K or equivalent drink)
7. If history and findings suggestive of heat stroke:
 - a. Remove to cooler environment
 - b. Cool with ice packs or moist sheets (must have good ambient air flow)
 - c. Stop cooling measures when core body temp is 39° c (102.2° F).



ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1 liter of IV fluid in 250ml increments until systolic BP > 90 mm Hg. Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or respiratory distress develop.
2. If altered mental status, determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 25gm 50% Dextrose IV or Glucagon 1mg IM or Sublingual glucose paste, may repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm 50% Dextrose IV or Glucagon 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to Hyperglycemia Protocol.
3. If seizures are present, and suspected to be heat-related:
 - a. Protect airway with appropriate airway adjuncts.
 - b. Valium 5-10 mg IV/IO, or Versed 2 – 4 mg IV/IO.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.9.4 Near-Drowning

Purpose: Near drowning patients are those who have been submerged in fresh or salt water and may or may not be conscious. Patients who ingested and/or aspirated water during the near drowning experience may initially decline to be transported to the hospital if after they have coughed, vomited and/or rested, they are feeling better following the incident. These patients should be strongly encouraged to be transported for evaluation as there are often delayed complications due to pulmonary edema or aspiration pneumonia.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#). Immobilize cervical spine if trauma suspected
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated, Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Determine pertinent history (duration of submersion, depth, water temperature, possible seizure, drug and/or alcohol use).
5. Maintain body temperature, dry and warm patient. Start passive re-warming if patient hypothermic.

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.

If apneic:

1. Initiate and maintain mechanical ventilation with 100% oxygen.
2. Endotracheal intubation (with in-line cervical immobilization).
3. Treat any dysrhythmias per appropriate protocol.
4. Transport and contact medical control en route.



If apneic and pulseless:

1. Initiate and maintain mechanical ventilation with 100% oxygen.
2. CPR.
3. Endotracheal intubation (with in-line cervical immobilization.)
4. Treat any dysrhythmias per appropriate protocol.
5. Transport and contact medical control en route.
6. If altered mental status, determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 25gm 50% Dextrose IV or Glucagon 1mg IM or Sublingual glucose paste, May repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm 50% Dextrose IV or Glucagon 1 mg IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to Hyperglycemia Protocol 2.8.2.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.
2. Initiate Dopamine drip if patient unresponsive to fluid challenge. Begin infusion at 2 mcg/kg/min and titrate to maintain systolic BP >90 mm Hg.



2.9.5 Electrical Emergencies / Lightning Strike

Purpose: This protocol is for patients who suffer the effects of an electrical injury. A wide range of injuries can be caused from a lightning strike or contact with electricity. Electrical injury can occur from direct contact, an arc, or a flash of the electricity and a direct hit or splash from lightning. The movement of electrical current through the body can cause violent muscle contractions that can lead to fractures, and therefore, the C-spine should be protected. The thermal energy can cause external burns, but in many cases the majority of thermal damage is internal, with few external signs of injury. Dysrhythmias are also common (e.g. ventricular fibrillation). The rescuer should be sure that the patient is no longer in contact with the electrical current before initiating treatment. Asystole is a common presentation with lightning strike. These patients should be aggressively resuscitated unless injuries are incompatible with life

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#). C-spine precautions if indicated. Move patient to a protected area (to prevent additional lightning strike).
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen via nasal cannula @2 - 4 LPM to maintain the pulse ox $\geq 94\%$ (non-rebreather @15 LPM if SpO₂ < 90%)
3. If cardiac arrest or dysrhythmias, standard ALS measures (see appropriate protocol 2.3).
4. Remove smoldering clothes and assess for trauma. Look for entrance and exit wounds.
5. Treat burns per [Burn Protocol 2.10.8](#)
6. Initiate Trauma Alert if applicable and meets criteria
7. Correct any open/sucking chest wound
8. Control hemorrhage
9. Cover burns with moist sterile dressing.
10. Attach cardiac monitor and pulse oximeter
11. Complete bandaging, splinting, packaging PRN. Immobilize injured extremities, making note of pulses, sensation, motor function, and color of distal extremities.
12. Try to determine amps, volts, and duration of contact, if possible

ALS LEVEL 1: PARAMEDIC ONLY

1. Initiate IV lactated Ringer's or Normal Saline at 125ml/hr. If patient hypotensive (systolic < 90 mm Hg) and/or tachycardic (HR > 110) bolus with 1- 2 liters of IV fluid in 250ml increments until systolic BP > 90 mm Hg (20 ml/kg for children). Recheck vital signs and lung exam in-between each increment. Discontinue bolus if signs of pulmonary edema or development of respiratory distress.
2. Correct any massive flail segment that causes respiratory compromise. Intubate if necessary.

Adult Protocols



3. Correct any tension pneumothorax (see needle decompression protocol)
4. If altered mental status, determine serum glucose level with Glucometer or DextroStix:
 - a. If sugar 60 mg/dl - 80 mg/dl; give; ½ amp of 25gm **50% Dextrose** IV or **Glucagon 1mg** IM or Sublingual glucose paste, May repeat x 1 if after 15 minutes recheck fingerstick glucose < 80 mg/dl
 - b. If Blood sugar < 60 mg/dl; 1 amp 25gm **50% Dextrose** IV or **Glucagon 1 mg** IM
 - c. If glucose > 80 mg/dl and < 200 mg/dl, provide supportive care, keep NPO
 - d. If glucose > 200 mg/dl, go to [Hyperglycemia Protocol 2.8.2](#).
5. If patient is in severe pain with no evidence of a head injury, chest or abdominal trauma, give one of the following:
 - a. **Morphine Sulfate** 2 – 10 mg IV or IM
 - b. **Fentanyl** 50 – 100 mcg IV or IM

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.10

Adult Trauma Emergencies



2.10.1 Head and Spine Injuries / Trauma

Purpose: This protocol is for patients who are suspected of having a head and/or spinal injury. If history, symptoms, or signs of head or spinal injuries are present, manually immobilize the head and neck while maintaining a patent airway using a modified jaw-thrust method. Immobilization of the entire spine is indicated following initial stabilization. Hangings without Trauma Alert Criteria ARE NOT Trauma Alert Patients (e.g. “suffocation type”, patient without C-spine deformity). **NOTE:** protocol 4.35 [Spinal Immobilization Clearance](#) should be used on a completely alert and cooperative patient at low risk for c-spine injury to determine if spinal immobilization is needed.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1.](#)
2. [Airway Assessment/Management Protocol 2.1.2.](#) Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Determine if C-spine immobilization is needed via [Spinal Immobilization Clearance Protocol](#).
4. Attach cardiac monitor and pulse oximeter
5. If isolated head injury, elevate head of backboard 30 degrees (12 – 18 inches).
6. Determine level of consciousness (AVPU).
7. Assess for and document the [Glasgow Coma Scale](#)
8. Complete motor examination (paralysis, weakness, posturing), if possible.
9. Pupillary examination (size, equality).
10. Complete sensory examination, if possible.
11. Open wounds, which expose the brain tissue, should be covered with saline-soaked gauze.
12. If combative, check airway, ensure oxygen delivery, and restrain as needed.

ALS LEVEL 1: PARAMEDIC ONLY

1. Intubation and ventilation with 100% oxygen for markedly decreased LOC, inability to maintain a patient airway, or for GCS $\leq$ 8.
2. If signs of brainstem herniation exist (e.g. pupillary dilatation, asymmetric pupillary reaction, or motor posturing), ventilate patient to achieve optimal ET CO₂ of 35 – 40 mm Hg.
3. If unresponsive or pulseless, apneic:
 - a. Intubate with neck in neutral position (stabilized with traction by second EMT).
 - b. Ventilate with 100% oxygen.
 - c. CPR if pulseless.
4. If BP <90 mm Hg systolic, or signs of shock:
 - a. IV Lactated Ringer's en route. Bolus with 250 ml increments of IV fluid p.r.n. x 2 liters. Recheck vitals after each bolus



5. If patient has seizures give one of the following:
 - a. Valium 2 - 10 mg IVP
 - or
 - b. Versed 2 – 4 mg IVP for seizures and agitation.
6. Consider need or RSI to control airway. See procedure 4.31 RSI

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.10.2 Eye Injuries

Purpose: This protocol covers a variety of injuries to the eye. If other injuries to the body exist, priority of care should be given as appropriate.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). Oxygen if applicable via nasal cannula @2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter as indicated.
4. Remove or ask patient to remove contact lens, if still in affected eye(s).
5. **If Penetrating Trauma:**
 - a. Stabilize penetrating object(s) and cover affected eye with an ocular shield or similar rigid device. Cover both eyes to minimize eye movement. Avoid direct pressure on eye or penetrating object.
 - b. DO NOT delay transport.
6. **If Blunt Trauma:**
 - a. Cover both eyes
 - b. Do Not delay transport
7. If eyeball has been forced out of the socket, cover the entire eye area with a rigid container, such as a disposable drinking cup. Avoid contact with the exposed globe. If bleeding, control by direct pressure with a sterile dry dressing.
8. **If Loss of Vision:** (If sudden painless and non-traumatic loss of vision, consider Retinal Artery Occlusion);
 - a. Apply cardiac monitor and assess for changes
 - b. Apply vigorous pressure using heel of hand to affected eye for 3-5 seconds, then release. (Patient may perform this procedure)
 - c. Do Not delay transport

ALS LEVEL 1: PARAMEDIC ONLY

1. If chemical injury or foreign body sensation;
 - a. Instill (if available) 2 drops **Tetracaine ophthalmic drops** (0.5% solution) in affected eye if patient not allergic to **Tetracaine** or the "caine" class of local anesthetics. Contraindicated in penetrating eye injuries or laceration of the cornea or globe.
 - b. If chemical injury, flush immediately with sterile normal saline and continue flushing en route.
 - c. Bring chemical container or name of chemical with patient to the emergency department.
2. Initiate IV lactated Ringer's or Normal Saline at KVO PRN if injury seems serious.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.



2.10.3 Chest Trauma: Blunt and Penetrating

Purpose: This protocol covers both blunt and penetrating chest trauma and should be part of initial resuscitation if breathing is compromised. Chest pain due to blunt trauma may be an indication of underlying injury. Blunt injuries such as a pulmonary contusion and cardiac contusion may cause respiratory insufficiency and /or myocardial infarction.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol. 2.1.1](#)
2. [Airway Assessment/Management Protocol. 2.1.2.](#) Oxygen via nasal cannula @ 4 LPM to maintain pulse ox $\geq 94\%$ (use non-rebreather @15 LPM if SpO₂ < 90%)
3. Attach cardiac monitor and pulse oximeter.
4. If penetrating or sucking chest or upper back wound (look for bubbles, listen for air leaks):
5. Place occlusive dressing (or commercially available covering) during exhalation (tape on 3 sides) or apply Asherman Chest Seal. Once occluded, monitor for tension pneumothorax.
6. Impaled objects should be stabilized in place. If impaled object is very large or unwieldy, attempt to cut object to no less than six inches from chest.

ALS LEVEL 1: PARAMEDIC ONLY

1. Start two large bore IVs or IOs of lactated Ringer's or normal saline TKO. Bolus as needed with two liters of IV fluid in 250 – 500 ml increments to maintain systolic BP > 90 mm Hg. Check vital signs frequently.
2. Call Trauma Alert if patient meets criteria (see [Trauma Alert Criteria](#))
3. If flail chest (unstable segment that does not expand with the remainder of the chest on inspiration):
 - a. If conscious, stabilize flail segment with gauze pad, IV bag, etc.
 - b. If unconscious, immobilize neck and intubate. Ventilate with 100% oxygen by BVM.
4. If tension pneumothorax develops, (unilateral absent breath sounds with or without tracheal deviation or bilaterally absent breath sounds):
 - a. Perform [needle decompression](#) per protocol.
5. If continued inadequate ventilations and decreasing LOC:
 - a. Rapid secondary survey for additional injuries.
 - b. Immobilize neck.
 - c. Control hemorrhage.
 - d. Intubate with cervical stabilization.
 - e. Ventilate with 100% oxygen via BVM.
 - f. Cardiac compressions if pulseless.
6. Treat any dysrhythmias per [cardiac dysrhythmia protocols](#).



7. If patient being transferred to another facility with chest tube(s) already in place:
 - a. Keep chest tubes tubing from kinking.
 - b. Check dressing over chest tube site to assure adequately adhered.
 - c. Keep pleuravac upright at all times.
 - d. Monitor if on suction for intermittent bubbling.
 - e. If patient with chest tube begins to experience severe respiratory distress:
 - 1) Rapidly assess ABCs.
 - 2) Assist ventilations as needed.
 - 3) Check chest tube tubing for kinks or leaky connections or blood in tube. If so, unkink, seal leak, or milk tubing.
 - 4) If patient is on board air ambulance, immediately ascertain the cabin altitude pressure. If greater than sea level, have the pilot descend the aircraft to achieve cabin altitude of sea level.

ALS LEVEL 2: MEDICAL CONTROL

1. medical control or medical director for further orders as needed.



2.10.4 Abdominal / Pelvic Trauma

Purpose: This protocol covers blunt and penetrating abdomino-pelvic trauma. Penetrating injuries may also include the chest. Patients who may initially appear normal can rapidly deteriorate and therefore should be closely monitored and have serial exams.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#)
3. Attach cardiac monitor and pulse oximeter.
4. If patient pregnant and back boarded, tilt board 30 degrees left
5. Impaled objects should be stabilized in place.
6. Eviscerations should be covered with saline-soaked gauze. Do not attempt to push the organs back into the abdomen. If PASG/ MAST is in use from another service or facility, do not inflate the abdominal section.
7. For penetrating injuries cover with an occlusive dressing (e.g. Vaseline gauze).
8. Do not log roll patient with a suspected pelvic fracture (may use scoop stretcher)
9. If pelvic fracture suspected, wrap in sheet splint
10. Rapid transport.

ALS LEVEL 1: PARAMEDIC ONLY

1. Establish two large bore IVs of lactated Ringer's to maintain systolic pressure > 90 mm Hg. Run in two liters of IV fluid. Monitor vital signs and lung sounds after each 250 ml bolus. Discontinue if signs of pulmonary edema. If systolic pressure still < 90 contact medical control for further IV orders. IF IV access is unavailable, insert one or two [EZ-IOs](#) in the appropriate extremities
2. Call a trauma alert on all patients that meet criteria (see [trauma alert protocol](#)).

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.
2. Pain management for abdominal pain ONLY by medical control orders



2.10.5 Extremity Injuries

Adult Medial Protocol

Purpose: This protocol will cover extremity injuries including fractures, crush, lacerations, and amputations. Time is critical if there is any chance of re-implanting the amputated part. Lacerations should be repaired as soon as possible (ideally wounds should be repaired within 6 hours), as the risk of infection increases with each passing hour before repair. Urgently transport any injury with vascular compromise.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#)
3. Control bleeding
4. Rinse any grossly contaminated wound with saline and cover with sterile dressing.
5. Attach cardiac monitor and pulse oximeter as indicated for seriously injured patient (may not be necessary for an isolated distal extremity wound or fracture).
6. Trauma Alert patients who meet criteria (see [Trauma Alert Criteria](#))
7. Transport to designated facility.
8. If severe life threatening hemorrhage cannot be controlled by direct pressure or other simple measures, apply a CAT tourniquet as per [Tourniquet Protocol](#)

FRACTURES

1. Any fracture or suspected fracture should be splinted appropriately and if possible, apply ice pack to area.
2. Remove and secure all jewelry on the affected extremity. Have your partner witness the disposition of the jewelry, i.e. given to patient or family member, and document disposition in the chart.
3. Check pulse, sensation, and movement before and after splinting.
4. Closed angulated fractures without distal pulse should be aligned using proximal and distal traction during splinting, except fractures that involve a joint, which should be splinted in position found.
5. Traction splints should be used in cases of closed femur fractures, unless a pelvic fracture is suspected. Hip fractures or pelvic fractures can be treated with sheet splint. Femur fractures can also be treated with [HARE Traction Splint](#) or [Sager Traction Splint](#).

AMPUTATIONS

1. The amputated stump should be dressed with bulky dressing
2. Rinse the amputated part with saline to remove loose debris.
3. Wrap amputated part in gauze moistened with saline
4. Placed wrapped part in plastic bag and seal. Label with name, date and time.
5. Place plastic bag on ice for transport.



ALS LEVEL 1: PARAMEDIC ONLY

1. One or two large bore IV(s) of lactated Ringer's solution at appropriate rate to maintain systolic > 90 mm Hg. If intraosseous IV is started, do not use injured extremity. If BP < 90, bolus with 250 ml increments of IV fluid up to 2 liters with vital sign rechecks between each bolus.
2. Treat for shock, if indicated.
3. If patient's blood pressure is stable AND isolated extremity wounds AND patient has no allergies to specific pain medication give one of the following:
 - a. Morphine IV in 2mg increments, titrate to pain up to 10mg
 - b. Fentanyl 50 – 100 mcg IV or IM
4. If nauseated, give one of the following:
 - a. Zofran 4-8mg IV or IM
 - b. Benadryl 25-50 mg IV or IM.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.
2. For IV fluid orders beyond 2 liters if patient remains hypotensive and tachycardic
3. For further pain medication orders beyond the amount allowed in ALS LEVEL 1



2.10.6 Burns

Purpose: Burns can be caused by solar, thermal, chemical, and electrical sources. First-degree burns (reddened skin, only the epidermal layer), and second-degree burns (red skin with blisters, extends into the dermis) are painful. Third degree burns (full thickness, charred appearance, All epidermal and dermal structures are destroyed) are painless and leathery. Many burns are associated with inhalation injury. The signs and symptoms of inhalation injury include: nasal and oropharyngeal burns, charring of the tongue or teeth, sooty (blackened) sputum, singed nasal and facial hair, abnormal breath sounds (e.g. stridor, rhonchi, wheezing, etc.), and respiratory distress. In cases of inhalation injury, attention should be given to the patency of the airway. Acute swelling can cause an airway obstruction. The paramedic should consider the need for early intubation to avoid a complete airway obstruction that requires a Cricothyroidotomy.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1.](#)
2. [Airway Assessment/Management Protocol 2.1.2.](#)
3. Attach cardiac monitor and pulse oximeter.
4. Extinguish any flames on patient; remove smoldering clothing (leather), and any constricting jewelry. Do not remove or peel off skin or tissue.
5. Stop the burning process:
 - THERMAL BURNS; Lavage the burned area with tepid water (sterile, if possible) to cool the skin. Do not attempt to wipe off semisolids (grease, tar, wax, etc)
 - CHEMICAL: Flush with water or normal saline. Brush off dry chemicals. Refer to [hazmat protocols](#) as indicated.
 - ELECTRICAL: Remove from contact with current source if equipped to do so. (Note any secondary fractures and Exit wounds caused by current.)
6. Assess the extent of the burn using the Rule of Nines and the degree of burn severity. Call trauma alert if patient meets criteria (2° or 3° burns > 20% BSA): (SEE [TRAUMA ALERT CRITERIA](#)) (See [Burn Rule of Nine Appendix](#)) (see [Burn Severity Catagories](#))
7. Apply dry sterile dressings to burn areas
8. Prevent hypothermia, keep patient warm and insure that all outer layers of dressings are dry
9. If altered LOC and/or signs of head injury (consider [carbon monoxide](#) and/or [cyanide poisoning](#) if closed space burn):
10. Transport to designated hospital.

ALS LEVEL 1: PARAMEDIC ONLY

1. 1 or 2 large bore IVs (in non burned area if possible) with Lactated Ringer's or Normal Saline. Rate should be based on 4cc/kg/%TBS area burned. ½ of this amount will be given over the first 8 hours, so divide the total amount by 2 then again by 8 and this is the cc/hr needed. Example: 70 kg patient with 60% burns to his body.



$$4 \text{ ml} \times 70\text{kg} \times 60 (\% \text{burned}) = 16,800$$

$$16,800 \div 2 = 8,400 \text{ (amount of fluid need in 8 hours)}$$

$$8,400 \div 8 = 1050 \text{ (amount of IV fluid /hour)}$$

2. If respiratory distress, or airway burns exist, prepare to intubate or support/assist ventilations.
3. If pulseless or apneic, go to [Cardiac Arrest Protocol](#).
4. If additional injuries, go to specific protocol.
5. If patient has isolated burn injuries and no evidence of head injury, altered mental status, chest trauma or abdominal trauma and normal vital signs, CHECK ALLERGIES, give one of the following pain meds for major burns;
 - [Morphine](#) 2mg increments IV and titrate to pain up to 10mg
 - [Fentanyl](#) 50 – 100 mcg IV or IM
 - For minor burns, give [Toradol](#) 30mg IV or 60mg IM.

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control for additional pain medication orders as needed.
2. Consider escharotomy per med control if circumferential burns of the neck, chest, or extremities are interfering with effective ventilations or circulation.
3. Contact medical control or medical director for any questions or problems



Burn Classification

Characteristics

Minor burn injury

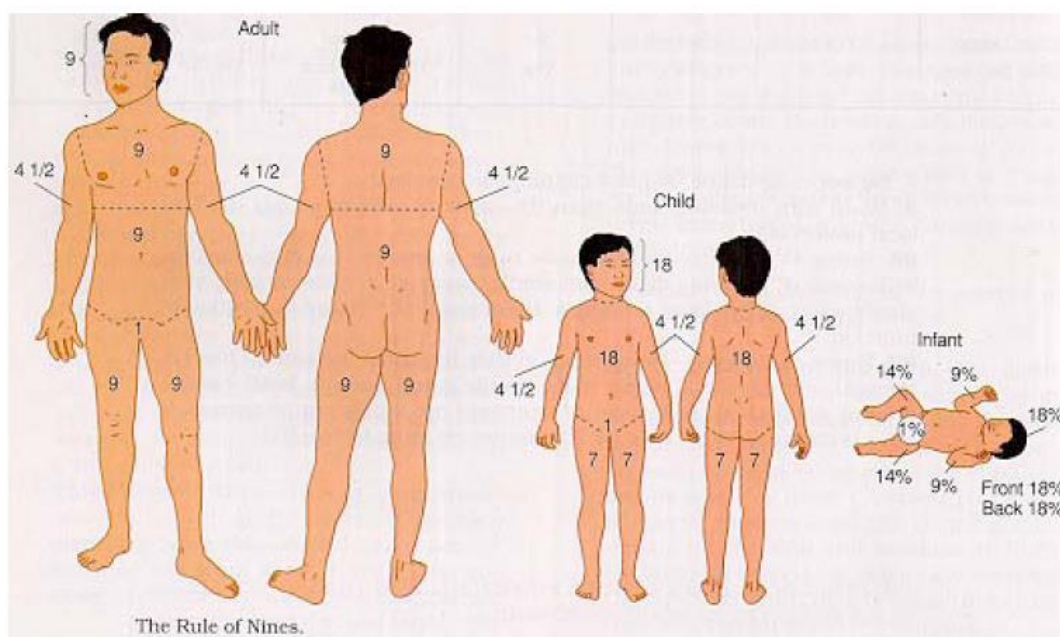
- ◆ 1° burn
- ◆ 2° burn < 15% BSA in adults
- ◆ 2° burn < 5% BSA in children/aged
- ◆ 3° burn < 2% BSA

Moderate burn injury

- ◆ 2° burn 16-25% BSA in adults
- ◆ 2° burn 5-20% BSA in children/aged
- ◆ 3° burn 2-10% BSA

Major burn injury

- ◆ 2° burn > 25% BSA in adults
- ◆ 2° burn > 20% BSA in children/aged
- ◆ 3° burn > 10% BSA
- ◆ Burns involving the hands, face, eyes, ear, feet, or perineum
- ◆ Most patient with inhalation injury, electric injury, concomitant major trauma, or significant pre-existing diseases





2.10.7 Dental Trauma /Avulsed Tooth/Teeth

Purpose: This protocol can be used for patients who sustained dental trauma. Broken teeth, dentures or partial plates can potentially cause airway obstruction, have high index of suspicion if patient is having any respiratory distress following dental trauma. These should be removed to clear the airway. If a tooth is completely knocked out and is not a primary (baby) tooth, make all possible attempts to locate the tooth. If the tooth can be located, AND the root is not broken (completely intact) follow this protocol to manage the situation.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#) (oxygen PRN)
3. Attach cardiac monitor and pulse oximeter PRN.
4. Transport to designated hospital.
5. If the avulsed tooth (teeth) can be located, pick it up by the crown and avoid touching the root. Inspect the tooth to make sure it is completely intact (not broken and the entire root of the tooth is intact).
6. Rinse in normal saline (DO NOT rub or scrub) and placed in moistened gauze, but there is no need to cool or ice. Transport with patient to the hospital. As an alternative, if re-implantation is NOT feasible and the patient is a fully conscious adult, then the best procedure is to place the tooth in the mouth, either under the tongue or in the buccal vestibule. This is not recommended for children
7. Re-implantation is recommended if possible at the scene as time is of the essence. The sooner an avulsed tooth can be re-inserted into its original socket, the greater the chance the tooth will survive. The following guidelines pertain to re-implantation at the scene:
 - a. Applicable only for permanent teeth (i.e., with patients over 6.5 years of age)
 - b. Applicable when only one or two teeth are cleanly avulsed and the entire root is present
 - c. Applicable only to anterior teeth (front 6, upper and lower)
 - d. The patient must be conscious, cooperative, and not under the influence of alcohol or drugs.
 - e. Should be attempted within the first 30 minutes; the sooner, the greater success rate
 - f. Have the patient rinse his/her mouth with saline and spit. Do this several times to rinse the oral cavity.
 - g. Rinse the tooth with saline (do not scrub), gently reposition it into the original socket and in as best anatomical position as possible (as even with the adjacent teeth as possible).
 - h. Do not force reimplantation. Gentle insertion is all that is necessary. Slight incorrect positioning can be corrected later.
 - i. Roll a piece of gauze and place between the patient's teeth. Ask the patient to lightly bite down to hold the re-positioned tooth in place with the rolled gauze.



ALS LEVEL 1: PARAMEDIC ONLY

1. Chances are this patient will not need IV fluids. Pain meds can be given IM however at paramedic's discretion, IV access can be established.
2. If this is isolated dental trauma with no signs of head injury, c-spine injury, or airway compromise, you may give one of the following:
 - a. Morphine 2mg increments IV up to 10 mg or Morphine 5mg IM
 - b. Fentanyl 50 – 100 mcg IV or IM,

ALS LEVEL 2: MEDICAL CONTROL

1. Notify medical control or medical director if any problems and/or questions



2.10.8 Sexual Assault

Purpose: This protocol is to be used for patients who are alleged victims of sexual assault. Treat patient with dignity. Be careful what and how you document. Avoid comments that may be construed as fact by an attorney but for which you have no proof. For example don't write; "patient sustained a large wound on her leg that occurred during the rape". Unless you were there and witnessed the incident, you cannot say for a fact that the wound occurred as the result of the rape. This also implies that you know for a fact that a rape occurred. It is better to use statements such as "the alleged rape" or "the patient states she was raped". Attorneys will back you into a corner and discredit your whole testimony if you make such statements.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox $\geq$ 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Reassure patient and provide emotional support.
5. Perform secondary survey.
6. Treat all injuries appropriately, preferably with a relative present.
7. Protect the scene and preserve evidence. Do not allow the patient to bathe, change clothes, go to the bathroom, or douche. Do not allow patient to place any potential evidence in plastic bags.
8. Notify police if not already informed.
9. Transport to hospital that is equipped to perform sexual assault examinations.

ALS LEVEL 1: PARAMEDIC ONLY

1. Unless patient has serious injuries and/or is hemodynamically unstable, no ALS Level 1 needed
2. Initiate IV only if indicated by seriousness of injury

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.



2.10.9 Taser / Stun Device Protocol

Purpose: This protocol is for patients who have been injured by a taser, stun gun, or similar incapacitating device.

DEFINITIONS:

Taser Device - means any device which is powered by electrical charging units, such as batteries, and which fires one or several barbs attached to a length of wire and which, upon hitting a human, can send out a current capable of disrupting a person's nervous system in such a manner as to render him/her incapable of normal functioning.

Stun Device – means any weapon or other device (except taser devices), which emits an electric or current, intended to temporarily disable a person.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Assessment Protocol 2.1.1](#)
2. Approach scene/patient only when scene is secure per law enforcement
3. Be sure wires are snipped from barb before evaluating/treating patient.
4. [Airway Assessment Protocol 2.1.2](#). (Assess/treat the ABC's as per any medical/trauma call). C-spine precautions if indicated
5. Evaluate and treat the patient for any trauma that may have resulted from a fall due to the taser/stun gun incident.
6. If patient has a specific complaint, evaluate/treat the area of concern according to protocol, (i.e. chest pain, shortness of breath, etc).
7. Management of the barbs:
 - a. Any penetrating barb in the skin above the clavicles or in the genitalia will be stabilized and transported to the hospital for removal.
 - b. Barbs penetrating the skin other than above the clavicles or the genitalia can be removed at the scene if the paramedic or EMT is comfortable doing so, otherwise, stabilized for removal at the hospital. To remove barbs, simply stabilize the skin on either side of the barb and pull straight out. Cleanse area with alcohol or Betadine afterwards.



8. Decision to transport to hospital:
 - a. Any patient who sustained obvious trauma from the incident will be transported.
 - b. Any patient with any medical complaint following incident will be transported (i.e. chest pain, shortness of breath, nausea, headache, muscle cramps, etc.)
 - c. Any patient with an altered mental status resulting from the taser/stun gun incident or perhaps under the influence of any mind altering substance (which may have led to the incident) will be transported.
 - d. Any patient who request transport for evaluation for any reason, will be transported.
 - e. Any patient who refuses to be transported to the hospital for further evaluation must meet the dry run/refusal criteria.
9. Law enforcement personnel should accompany paramedic for high risk (violent, dangerous) patients.

ALS LEVEL 1: PARAMEDIC ONLY

1. None unless significant trauma then refer to appropriate protocol.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any concerns or questions.



2.10.10 General Crush Injury

Purpose:

This protocol should be considered when the patient has been **entrapped at the scene for more than two hours**, one or more full extremities trapped by an object capable of causing a crush injury, including machinery, dirt, rock, and rubble or there is entrapment of patient with history of previous cardiac or renal disease or dialysis treatment.

Crush Syndrome should be suspected in patients with entrapment/compression of greater than one hour, especially when a large muscle mass/group is involved. Treatment of the patient at risk for Crush Syndrome ***should begin before the patient is removed when practical***. After the skeletal muscle injury occurs and the crushing object is removed, the accumulation of cellular toxins (myoglobin) and electrolytes (potassium) are released into the circulation and may cause lethal cardiac arrhythmias, acute renal failure and sudden death. The systemic effects of Acute Crush Syndrome only occur after the object is removed and the injured extremity is re-perfused. Removal of the object causes a massive fluid shift into the injured muscle, resulting in acute hypovolemia and hypotension.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment Protocol 2.1.2](#). Oxygen via nasal cannula @2 - 4 LPM to maintain pulse ox at $\geq 94\%$ (non-rebreather @15 LPM if $SpO_2 < 90\%$) (environmental considerations, dust)
3. Spinal immobilization if applicable
4. Confirm entrapment of 1 or more extremities
5. Complete trauma assessment to evaluate for other injuries and treat immediate life threats immediately
6. Hemorrhage control, may require Tourniquet (see [Tourniquet Protocol 4.42](#))
7. Place on Cardiac Monitor and pulse oximeter. Take vitals
8. If the extremity is reachable, check for decreased sensation, motor function, skin color changes and diminished distal pulses
9. Rapid transport once extricated



ALS LEVEL 1: PARAMEDIC ONLY

PRE-EXTRICATION;

1. Establish two large bore IVs of NS (or LR). 2 liters NS bolus, followed by 500 ml/hr (limit fluid bolus for pediatric (20 ml/kg) and patients with history of cardiac or renal dysfunction)
2. Pain control per Pain Protocol 2.1.5. Fentanyl is preferred to Morphine.
 - a. Fentanyl 50 – 100 mcg IV or IM
 - b. Morphine 4 mg initial then 2 mg increments prn up to 10 mg
3. IMMEDIATELY PRIOR TO EXTRICATION; Give Sodium Bicarbonate 1 mEq/kg up to 100 mEq IVP
4. Extrication

POST-EXTRICATION

5. Continue cardiac monitoring and assess for hyperkalemia; i.e. widening of QRS (>0.12 seconds) and peak T waves, hypotension
6. If hyperkalemic changes on monitor, give; Calcium Chloride 1 gm IV slow (over 5 minutes)
7. Give an Albuterol (only) Neb 2.5 mg
8. Dress/splint wound/extremity
9. Call Trauma Alert if criteria are met

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any questions or problems.



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2.11 Adults With Special Health Care Needs



2.11 Adults with Special Healthcare Needs

Overview: These protocols cover specific types of special healthcare needs in adult patients. Adults with special healthcare needs are those who have or are at risk for chronic physical, developmental, behavioral, and emotional conditions that necessitate use of health and related services of a type or amount not usually required by typical adults.

The general approach to adults with special healthcare needs includes the following:

1. Priority is given to ABCs.
2. Do not be overwhelmed by the machines
3. Listen to the caregiver.
4. If a nurse is present, rely on their judgment.
5. Remember...the patient's cognitive level of function may be altered.
6. Assume that the patient can understand exactly what you say.
7. Bring all medications and equipment to the hospital.

Obtaining a history includes asking the parent/caregiver the following:

1. Patient's normal vital signs
2. Patient's actual weight.
3. Developmental level of the patient.
4. Patient's allergies- include latex.
5. Pertinent medications/therapies.



2.11.1 Home Mechanical Ventilators

Purpose: This protocol is for patients who are on home ventilators. Home mechanical ventilators may be indicated for chronically ill adult with abnormal respiratory drive, severe chronic lung disease, or severe neuromuscular weakness. Some patients require continuous mechanical ventilation, while others only require intermittent support during sleep or acute illness. Home ventilators may either be volume limited or pressure limited. All are equipped with alarms. Types of ventilator alarms:

- Low pressure or apnea: May be caused by a loose or disconnected circuit or an air leak in the circuit or at the tracheostoma, resulting in inadequate ventilation.
- Low power: caused by a depleted battery.
- High pressure: can be caused by a plugged or obstructed airway or circuit tubing, by coughing, or by bronchospasm.
- Setting error: is caused by ventilator setting outside the capacity of the equipment.
- Power switchover: occurs when the unit switches from alternating-current power to the internal battery.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If ventilator-dependant patient is in respiratory distress and the cause is not easily ascertained and corrected, remove the ventilator and provide assisted manual ventilations with a bag-valve device.
3. Suction PRN
4. Attach cardiac monitor and pulse oximeter if indicated
5. Consider need for other protocols

ALS LEVEL 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any problems or concerns.



2.11.2 Tracheostomy

Purpose: Tracheostomies are indicated for long-term ventilatory support, to bypass an upper airway obstruction, and to aid in the removal of secretions. Tracheostomies come in a variety of sizes and can be either single lumen or double lumen. Special attachments include: tracheostomy nose (filtration device), tracheostomy collar (for oxygen or humidification), and Passy-Muir valve (speaker valve).

Signs of tracheostomy tube obstruction:

- Excess secretions.
- No chest wall movement.
- Cyanosis.
- Accessory muscle use.
- No chest wall rise with bag-valve ventilations.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If obstruction is present, inject 1-3 ml of normal saline into the tracheostomy tube and suction PRN.
3. If unable to clear obstruction by suctioning, remove tracheostomy tube and insert new tube (same size or one size smaller). DO NOT FORCE TUBE.
4. If unable to insert new tracheostomy tube or if unavailable, insert endotracheal tube of similar size into stoma and ventilate with bag-valve-device PRN.
5. If unable to insert endotracheal tube, ventilate with bag-valve-mask over stoma or over patient's mouth while covering stoma PRN.
6. Attach cardiac monitor and pulse oximeter if indicated.
7. Consider need for other protocols.

ALS LEVEL 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any problems or concerns



2.11.3 Central Venous Lines

Purpose: Central venous lines are indicated for administration of medications, delivery of chemotherapy, nutritional support, infusion of blood products, and blood draws. Types of central venous lines include: Broviac/Hickman, Port-a-cath/Med-a-port, and percutaneous intravenous catheters (PIC). Central venous line emergencies include: catheter coming completely out, bleeding at the site, catheter broken in half, blood embolus, thrombus, air embolus, and internal bleeding. **Use of SUB-Q ports require special training and should not be used for IV access.**

Signs of blood embolus, thrombus, air embolus and internal bleeding:

- Chest pain
- Cyanosis
- Dyspnea
- Shock

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient Assessment Protocol 2.1.1](#)
2. [Airway Assessment/Management Protocol 2.1.2](#). If indicated Oxygen via nasal cannula @ 2 - 4 LPM to maintain pulse ox at $\geq$ equal to 94% (non-rebreather @15 LPM if SpO₂ < 90%).
3. Attach cardiac monitor and pulse oximeter if indicated
4. If catheter is completely out, apply direct pressure.
5. If there is bleeding at the site, apply direct pressure.
6. If catheter is broken in half, clamp end of remaining tube.
7. If suspect blood embolus, thrombus, or internal bleeding: clamp line.
8. If suspected air embolism, clamp line and place patient on left side.
9. Consider need for other protocols

ALS LEVEL 1: PARAMEDIC ONLY

- 1 CVP and PIC lines may be used for emergency IV access under sterile conditions
- 2 If central ports need accessing for emergencies, refer to (Protocol [4.42 Indwelling Vascular Catheter](#))

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or medical director for any problems or concerns



2.11.4 Feeding Tubes

Purpose: Feeding tubes are indicated for administration of nutritional supplements and in patients that have an inability to swallow. Types of feeding tubes include: nasogastric tube (temporary) and gastrostomy tubes (G tube). Types of G tubes include those that are surgically placed, percutaneous endoscopic gastrostomy tubes, PEG tubes, and jejunal tubes (J-tube). Complications include: leaks, bleeding around the site, and displacement of the tube.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. Medical Supportive Care 2.1.3
2. If catheter is completely out, cover site with Vaseline gauze and apply direct pressure to site.
3. If there is bleeding at the site, apply direct pressure.

ALS LEVEL 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Contact medical control or the medical director for any questions or concerns.



2.11.5 Blood Product Administration

Purpose: To monitor and maintain a patient with an already established blood or blood product transfusion during an interfacility transport.

Procedure:

ALS LEVEL 1: PARAMEDIC ONLY

- A. All blood products to be infused must be initiated by the transferring facility. This protocol does not authorize the paramedic to start, hang or otherwise initiate the infusion of blood products.
- B. Before accepting responsibility for the patient, confirm together with a nurse or physician from the transferring facility that the name on the patient's armband is the same as the name on the unit(s) of blood which is(are) infusing. The patient must have an armband, no exceptions.
- C. Obtain a written order from the transferring physician as to the rate of infusion, the total amount to be infused during transport of the patient. This must be attached to the Patient care report and must be delivered to the Receiving facility.
- D. Vital signs, including body temperature, must be recorded prior to the transport and every ten minutes during transport, until arrival at the receiving facility.
- E. Patient Monitoring – In addition to vital signs monitoring, the patient should be assessed on an ongoing basis for:
 - 1. Signs and symptoms of adverse reaction to the infusion (hives, rash, rigor, chills, difficulty breathing, etc).
 - 2. Correct rate of flow
 - 3. Any pain or swelling at/around the IV site
 - 4. an increase of more than 1° C, or 1.8° F above the patient's initial temperature, indicates a febrile response.



- F. If the patient develops any sign of allergy/sensitivity reaction, including; chills, fever (an increase of more than 1° C, or 1.8° F above the patient's initial temperature), chest pain, flank pain, hives, wheezing, or the patient begins showing signs of shock; then the following actions should be initiated immediately:
1. The infusion of blood products must be immediately stopped and the blood administration tubing removed. The tubing, the blood container, and any unused blood must be saved for delivery to the receiving facility.
 2. A 0.9 Sodium Chloride infusion should be initiated and fluid should be administered as indicated in the shock protocol if shock is present.
 3. Anaphylactic reactions (hives, wheezing, and shock without fever) should be treated as indicated in the Anaphylaxis protocol.
 4. Hemolytic reactions (fever, chills, chest pain, flank pain, and/or shock) may require a diuretic in addition to large amounts of fluid to maintain intravascular volume. Treat shock as indicated in the Shock Protocol and contact TMH Medical Control for orders regarding diuretic administration in hemolytic reactions.
- G. Document all observed signs and symptoms on the PCR and include any interventions or actions taken as well as the patients' response to those actions.

#3367

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "Agreement") is made and entered effective the 30th day of November 2015, by and between TALLAHASSEE MEMORIAL HEALTHCARE, INC. ("TMH"), a Florida not-for-profit corporation, and COLBY REDFIELD, M.D. ("Physician"). TMH and Physician are sometimes referred to herein individually as "Party" and collectively as "Parties."

RECITALS

WHEREAS, TMH is the owner and operator of a general acute care hospital located at 1300 Miccosukee Road, Tallahassee, Florida, 32308, through which it furnishes a full range of health care services; and

WHEREAS, TMH seeks to further its charitable mission by providing quality service and care for its patients and members of the community; and

WHEREAS, Physician is a duly licensed physician who has the necessary qualifications, training and experience to provide quality medical services to TMH patients; and

WHEREAS, TMH and Physician desire to enter this Employment Agreement through which Physician will become an employee of TMH; and

WHEREAS, this Employment Agreement is intended to provide a full statement of the respective rights and responsibilities of TMH and Physician.

NOW, THEREFORE, in consideration of the foregoing recitals and the mutual promises and covenants contained herein, the Parties agree as follows:

ARTICLE I

PHYSICIAN'S DUTIES AND COMPENSATION

1.1 Duties of Physician.

(a) Services. During the term of this Agreement, Physician shall provide the services identified in Exhibit 1.1(a) (the "Services"). Exhibit 1.1(a) is hereby incorporated and made part of this Agreement.

(b) Performance Standards. Physician shall provide the Services consistent with the following standards of performance:

- (i) All accepted standards of medical practice in Physician's specialty;

- (ii) All applicable statutes and regulations, including without limitation Medicare and Medicaid statutes and regulations and the statutes and regulations relating to the licensure of physicians in the practice of medicine;
- (iii) All applicable standards set forth by the Joint Commission;
- (iv) All practice guidelines and protocols as may be established by TMH and applicable policies and procedures;
- (v) All applicable TMH Medical Staff Bylaws and Medical Staff Rules and Regulations; and
- (vi) All terms and conditions of this Agreement.

(c) Availability. Physician shall be available to provide the Services as provided in Exhibit 1.1(a) and in accordance with the schedules established by TMH. If Physician is required to provide call coverage as part of the Services as defined in Exhibit 1.1(a), Physician's share of call coverage shall be comparable to that of other similarly situated TMH-employed physicians in Physician's specialty.

(d) Professional Qualifications. Physician agrees that during the term of this Agreement, Physician shall:

- (i) Maintain a current, valid and unrestricted license to practice medicine in the state of Florida;
- (ii) Remain a member in good standing of the TMH Medical Staff with unrestricted clinical privileges to provide the Services;
- (iii) Maintain certification as a participating provider with the Medicare and Medicaid programs;
- (iv) Maintain all necessary licenses to prescribe medications, including controlled substances;
- (v) Maintain or be eligible for appropriate board certification, as applicable, for the Physician's specialty at the time Physician's employment begins, and be board-certified in Physician's specialty no later than two (2) years after Physician's employment begins;
- (vi) Maintain board certification for the Physician's specialty by completing all actions required by the certifying board to renew such certification from time-to-time without lapse;
- (vii) Participate in appropriate continuing medical education;
- (viii) Maintain the legal right to work in the United States; and
- (ix) Comply with all applicable laws, rules, regulations, and standards.

Upon request by TMH, Physician shall timely provide proof of compliance with these qualifications. In the event that Physician no longer complies with any one of these qualifications, Physician shall immediately notify TMH, Physician's employment hereunder shall be suspended, and Physician's clinical privileges shall be affected in accordance with the

procedures set forth the TMH Medical Staff Bylaws. TMH may, at its sole option, provide Physician with a reasonable opportunity to cure such non-compliance, provided that Physician's employment shall remain suspended until the noncompliance is cured and any issues relating to clinical privileges are resolved. Both Parties acknowledge that failure to comply with any one of these qualifications, or failure to timely provide proof of same, shall constitute a material breach of this Agreement and be grounds for immediate termination unless cured in a reasonable time period as may be permitted by TMH in accordance with Section 2.2(b).

(e) Indigent Care; Nondiscrimination. In order to further TMH's charitable mission of providing quality health care to all segments of the community, Physician specifically agrees to accept Medicare and Medicaid patients and to treat medically indigent patients without regard to the patient's ability to pay and without regard to race, color, national origin, citizenship, sex, age, disability, religion, or other factors unrelated to the patient's need for care.

(f) Records and Reports.

- (i) At all times during the term of this Agreement, Physician shall timely and properly complete all required medical records and reports in accordance with applicable laws, rules, regulations, and TMH policies and procedures.
- (ii) All patient records, as defined by the Medical Staff Bylaws and/or Rules and Regulations, shall belong to and remain the property of TMH notwithstanding the subsequent termination of this Agreement.
- (iii) Physician agrees to keep secure and confidential all patient records and information contained therein in accordance with all applicable state and federal laws and regulations, including but not limited to the federal Health Information Portability and Accountability Act ("HIPAA") and corresponding regulations, as may be amended from time to time. Physician acknowledges that failure to keep patient records and/or information confidential constitutes a material breach of this Agreement and is grounds for immediate termination.
- (iv) Physician shall comply with any reasonable request for patient documentation from TMH as may be required from time to time.
- (v) All other records, reports, and files of TMH, its Board of Directors, Medical Staff, and committees that relate to TMH's strategic and financial processes and to the evaluation and improvement of the quality of patient care at TMH shall be kept strictly confidential by Physician. Physician agrees not to disclose any such information, either orally or in writing, except as expressly required by law or pursuant to a written authorization from TMH.
- (vi) This section shall survive the expiration or termination of this Agreement for any reason.

(g) Patients. TMH and Physician shall mutually determine who will be accepted as patients of TMH, and the Physician acknowledges that all patients accepted are patients of TMH and not of Physician. Once a patient is accepted, TMH shall have the authority to designate, or to establish a procedure for designating, which physician of the Employer will handle each patient.

(h) Fees.

- (i) All sums paid by any patient for medical services rendered by Physician pursuant to this Agreement shall be and remain the property of TMH. Physician hereby assigns to TMH all of Physician's rights to payments and claims for medical services rendered pursuant to this Agreement.
- (ii) All sums paid by any non-patient third party for any and all medical services, educational services, training services, and/or research services rendered by the Physician in his or her capacity as a TMH employee for the provision of Services as defined in Exhibit 1.1(a) shall be and remain the property of TMH, unless otherwise agreed to in writing prior to the performance of such service(s).
- (iii) Notwithstanding anything contained herein to the contrary, any sums paid by the Florida State University College of Medicine (FSU COM) to Physician for the supervision of medical school students as described in Exhibit 1.1(a)(12) shall remain the property of Physician as long as such duties are performed during a period in which the FSU COM is a TMH approved clinical clerkship program.

(i) Outside Activities. Nothing shall preclude the Physician from engaging in any other business activity, provided that TMH in its sole discretion determines the activity does not interfere with Physician's obligations and duties under this Agreement.

(j) Compliance with TMH's Code of Conduct. Physician recognizes that it is essential to the core values of TMH that all persons employed by TMH conduct themselves in compliance with the highest standards of business ethics and integrity, as reflected in TMH's Corporate Compliance Program and Code of Conduct. Physician acknowledges that Physician has received a copy of the Code of Conduct and has read and understands same. Physician agrees that Physician shall at all times abide by, and act in a manner consistent with, the Code of Conduct in Physician's practice of medicine. Physician further agrees that in the event that TMH determines in good faith that Physician has breached his or her obligations under this paragraph, Physician shall cure such breach upon ten (10) days written notice from TMH. If such breach is not cured within ten (10) days following Physician's receipt of the notice, TMH may immediately terminate this Agreement.

(i) Employment. Physician anticipates working on a "full time employment" basis. "Full time employment" or "FTE" shall mean 2,080 hours of service per year comprised of approximately 1,780 hours per year of scheduled emergency clinical services, during which Physician will be available to see patients at TMH's facilities, and 300 hours of non-compensable leave (including sick leave, continuing medical education leave, personal leave, holiday leave, and annual leave). Physician is not required to work on an FTE basis, but failure to do so may affect the benefits provided to Physician under this Agreement.

1.2 Compensation and Benefits

(a) Compensation. TMH agrees to pay Physician during the term of this Agreement compensation in accordance with the terms of Exhibit 1.2(a). Exhibit 1.2(a) is hereby incorporated and made part of this Agreement.

(b) Benefits. Physician shall be entitled to the benefits set forth in Exhibit 1.2(b), which is hereby incorporated and made part of this Agreement. Physician shall also be entitled to such other benefits as may be provided pursuant to the TMH Human Resources Policies and Procedures, if applicable. Benefits provided pursuant to TMH Human Resources Policies and Procedures are subject to change from time to time. In the event of a conflict between this Agreement and the TMH Human Resources Policies and Procedures, this Agreement shall control.

(c) Relocation Expenses. In the event that the Physician is relocating from a location at least fifty (50) miles outside of Tallahassee, Florida, then TMH shall provide Physician with relocation expenses in accordance with the terms and conditions of Exhibit 1.2(c), if applicable, which is hereby incorporated and made part of this Agreement.

(d) Withholding of Taxes. All compensation shall be subject to normal income tax withholding requirements, subject to Physician election as allowed by applicable law.

(e) Termination Upon Death of Physician. All rights of the Physician under this Agreement shall terminate upon Physician's death (other than rights which have already accrued). TMH shall pay to the estate of the Physician such compensation as would otherwise have been payable to the Physician at the date of Physician's death, including but not limited to benefits, as applicable, in accordance with TMH Human Resources Policies and Procedures, and TMH shall have no further financial obligation under this Agreement to the Physician or Physician's estate after such payment. Any amounts owing to the Physician under any retirement plans or other compensation arrangements, if any, with TMH shall be handled solely in accordance with the terms of such plans or arrangements and not by the terms of this Agreement.

(f) No Referrals. The Parties represent, covenant, warrant and agree that all compensation paid hereunder is reasonable, is based solely on the fair market value of the

Services to be provided by Physician, and is not based in any manner on the volume or value of referrals or of services provided which are paid for by federal or state health care programs.

(g) Verification. Physician shall have the right to receive detailed statements of TMH's calculation of Physician's compensation and the right to review on a reasonable basis TMH's records related to TMH's calculations. Any request for such statements and/or records shall be made in writing within thirty (30) days after Physician's receipt of the compensation for which the request for statements and/or records is made.

1.3 Insurance

(a) Professional Liability Insurance. TMH shall furnish Physician with professional liability and other types of insurance coverage as deemed necessary by TMH. Such insurance shall cover only the Services provided by Physician on behalf of TMH pursuant to this Agreement. The amount of professional liability coverage maintained by TMH on behalf of Physician shall be determined by TMH, but in no event shall the amount be less than the minimum required by the applicable Florida Statutes and TMH Medical Staff Bylaws.

(b) Tail Insurance. TMH will continue to provide professional liability coverage for the Services provided by Physician on behalf of TMH during Physician's employment after Physician's employment has terminated, until the applicable state statute of limitations has expired.

1.4 Space and Facilities.

TMH shall furnish professional office space and other facilities, medical equipment, supplies (including scrubs and lab coats), billing, correspondence, and other personnel reasonably needed by Physician in the rendering of the Services on behalf of TMH.

ARTICLE II

TERM AND TERMINATION

2.1 Term

(a) Initial Term. The Initial Term of this Agreement shall commence on the 3rd day of July, 2016, ("Commencement Date") and terminate on the 2nd day of July, 2017. Every twelve (12) month period during the Term of this Agreement from the Commencement Date and each anniversary of the Commencement Date shall be referred to herein as a "Contract Year" and each three (3) month period ending on December 31st, March 31st, June 30th, and September 30th during a Contract Year shall be referred here as a "Contract Quarter".

(b) Automatic Renewal. After the expiration of the Initial Term, unless otherwise terminated in accordance with the provisions of this Agreement, the Agreement shall renew automatically each year on the anniversary date for a term of one (1) year.

2.2 Termination

(a) Termination Without Cause. Either party may terminate this Agreement at any time upon at least one hundred and twenty (120) days' prior written notice to the other party.

(b) Termination for Cause: By TMH. TMH may terminate this Agreement immediately for cause in the event that Physician breaches a material term of this Agreement or upon the occurrence of one or more of the following:

- (i) Physician's license to practice medicine in the State of Florida is suspended, revoked, surrendered, or Physician is otherwise prohibited, temporarily or permanently, from being allowed to practice medicine in Florida;
- (ii) Physician is found in violation by the appropriate governmental entity of state or federal law related to the practice of medicine or the administration of the practice of medicine, including, but not limited to, any billing or other governmentally mandated regulatory matter; however, it is the operative intent of this subsection that such violation be material and serious and not be construed as a technical or minor violation;
- (iii) Physician fails to comply with any order of any regulatory body regulating the Physician's license to practice medicine;
- (iv) Physician fails to complete treatment pursuant to an impaired physician statute that is applicable to the Physician;
- (v) Physician's Medical Staff membership at TMH is suspended, terminated, denied, restricted or not renewed, for whatever reason;
- (vi) Physician behaves or engages in conduct which is considered by TMH, as determined by the TMH Chief Medical Officer, to be lower than the standards of practice in the community, or to be disruptive of the orderly operation of the practice of medicine at TMH, or to reflect poorly on and/or damage the reputation of TMH; or

- (vii) The TMH CEO or CMO determines reasonably and in good faith that termination of the Agreement is necessary in order to protect the health or welfare of patients, employees, and/or visitors of TMH.

Prior to terminating the Agreement for cause pursuant to this section 2.2(b), TMH may, at its sole option, provide Physician with a reasonable opportunity to cure the material breach giving rise to TMH's decision to terminate this Agreement, provided that if Physician's employment is suspended in accordance with section 1.1(d) of this Agreement, Physician's employment shall remain suspended until such breach is cured.

(c) Payment Upon Termination. In the event this Agreement is terminated, then TMH shall pay Physician any compensation earned but not yet paid to Physician prior to the date of termination. Such payment shall be in full and complete discharge of any and all liabilities or obligations of TMH to Physician under this Agreement, and the Physician shall be entitled to no further benefits under this Agreement. Any amounts owing to Physician under any retirement plans or other compensation arrangements, if any, with TMH shall be handled solely in accordance with the terms of such plans or arrangements and not by the terms of this Agreement.

(d) Effect of Termination. In the event this Agreement is terminated, the rights and obligations of the Parties shall terminate except as otherwise set forth herein. However, the Parties shall cooperate to ensure the orderly transfer of responsibilities to successor physician(s). In the event this Agreement is terminated during its first year, the Parties shall not enter into an agreement for the same services prior to the first anniversary date of this Agreement. In the event this Agreement is terminated prior to the Commencement Date, no amounts, if any, shall be due to Physician, including but not limited to any signing bonus or other costs, and any amounts paid to Physician shall be repaid by Physician within thirty (30) days after written demand by TMH.

ARTICLE III

COMPLIANCE

3.1 Compliance with Applicable Laws

(a) Fraud and Abuse Laws. TMH and Physician shall comply with all federal and state fraud and abuse prohibitions, as amended from time to time, including but not limited to: the Federal Anti-Kickback Statute, 42 U.S.C. § 1320a-7b; the Federal Stark Act, 42 U.S.C. § 1395nn; the Florida Patient Self-Referral Act of 1992, Fla. Stat. § 456.053; and the Florida Patient Brokering Prohibition, Fla. Stat. § 817.505. The Parties shall not, directly or indirectly, determine the fees paid to Physician for the provision of the Services based on the volume or value of referrals between Physician and TMH for designated health services as defined in 42 U.S.C. § 1395nn. The Parties warrant that all remuneration, goods and services exchanged between the Parties are for a commercially reasonable business purpose, are determined by the

fair market value, reflect the actual provision of health care and other goods and services provided and are not exchanged to induce and/or direct any direct or indirect referrals of goods and/or services that may be paid by a governmental program or any other health care benefit program. If either Party develops a concern that any provision of this Agreement violates or may violate any applicable federal or state fraud and abuse law(s), then such Party shall immediately notify the other Party in writing of such concern and the specific activities giving rise to such concern. If necessary, the Parties then shall negotiate in good faith to amend this Agreement to bring it in compliance with applicable law.

(b) Privacy Laws. Both Parties shall comply with all applicable state and federal health information security and privacy laws and regulations, including but not limited to the federal HIPAA laws and regulations. Physician expressly acknowledges that, in addition to complying with all such applicable laws and regulations, Physician will:

- (i) Use appropriate safeguards to prevent the use or disclosure of patient health information ("PHI") and comply with all TMH policies and procedures regarding the privacy and security of PHI;
- (ii) Report any known misuse of PHI to the TMH Privacy Officer;
- (iii) Participate in any required HIPAA training provided by TMH;
- (iv) Cooperate with TMH to make PHI and an accounting of disclosures available to individuals as required by applicable HIPAA regulations; and
- (v) Cooperate with TMH to make the internal practices, books and records of Physician and TMH relating to use and disclosure of PHI available to the United States Department of Health and Human Services.

This confidentiality provision will survive the termination or expiration of the terms of this Agreement.

3.2 Compliance with TMH Internal Policies and Procedures. Physician agrees that, in addition to complying with the TMH Code of Conduct as set forth in paragraph 1.1(j) of this Agreement, Physician shall comply with the TMH Medical Staff Bylaws and Medical Staff Rules and Regulations, as each may be amended from time to time. Physician acknowledges that Physician has been provided a copy of both the Medical Staff Bylaws and the Medical Staff Rules and Regulations. Physician further agrees to comply with all applicable TMH Human Resources Policies and Procedures, as amended from time to time.

ARTICLE IV

NONCOMPETITION, CONFIDENTIALITY, AND INDEMNITY

4.1 **Covenant Not to Compete; Non-solicitation.** Other than as specifically provided below, during the term of employment and for one (1) year following the termination or expiration of employment under this Agreement, Physician will not:

- (a) engage in, accept employment from, or become affiliated or connected with, directly or indirectly, or be interested, directly or indirectly, in any way in the practice of emergency or urgent care medicine within fifteen (15) miles of Physician's primary practice location ("Restricted Area");
- (b) own, in whole or in part, directly or indirectly, an emergency or urgent care facility;
- (c) solicit or attempt to solicit, directly or indirectly, patients of TMH;
- (d) solicit or attempt to solicit any person employed or contracted by TMH to leave their employment with TMH or to not fulfill their contractual responsibility with TMH;
- (e) use patient, vendor, payor, or customer lists that belong to TMH.

Nothing herein shall preclude Physician from engaging in any other professional activities, provided that such other professional activities (i) do not constitute the practice of emergency medicine or urgent care medicine in the Restricted Area, (ii) do not constitute the provision of advice or consultation regarding the practice of emergency medicine or urgent care medicine to any provider of emergency medicine located in the Restricted Area, and (iii) do not interfere with the discharge of Physician's duties and responsibilities set forth herein.

Notwithstanding any limitations specified above, Physician may be employed by: (i) an emergency or urgent care facility immediately following the termination or expiration of this Agreement, provided that such facility is not affiliated with or owned by any hospital other than TMH; and (ii) Leon County EMS, Tallahassee Fire Department, and/or Lifeflight during and immediately following the termination or expiration of this Agreement, subject to the provisions of section 1.1(i) this Agreement, if applicable.

Physician acknowledges and agrees that these non-solicitation and non-competition covenants are reasonable and necessary to protect TMH's legitimate business interests, including but not limited to valuable confidential business information, substantial relationships with specific prospective and existing patients, vendors, employees, and others, and patient good will, all of which TMH has spent considerable time, effort and money to establish. Physician further acknowledges that a breach of these covenants will result in irreparable harm to TMH.

The Parties specifically agree that TMH shall have the right to enforce the provisions of this section 4.1 through injunctive relief in addition to and not as substitution for other remedies or damages that may be available. If a court of law should alter the duration and/or scope of the non-solicitation or non-competition period set forth in this section, the altered terms shall continue in effect for said period. This section 4.1 shall survive termination or expiration of this Agreement unless TMH agrees in writing to waive the provisions of this section.

4.2 **Confidentiality of Employment Agreement.** Neither Party shall disclose the terms of this Agreement without the other Party's prior written approval except as may be required by court process, valid governmental agency demand, or persons representing Physician or TMH in professional or business matters. This provision shall survive termination or expiration of this Agreement.

4.3 **Indemnification.** Each Party shall indemnify and hold harmless the other Party against all actions, claims, demands, and liabilities, and against all loss, damage, costs, and expenses, arising directly or indirectly out of an indemnifying Party's intentional breach of this Agreement. This provision shall survive the expiration or termination of this Agreement until the expiration of the applicable statute of limitations period.

ARTICLE V

GENERAL PROVISIONS

5.1 **Notices.** Any notice required or permitted to be given under this Agreement shall be sufficient if in writing and if personally delivered or sent by third-party courier, overnight delivery service, or certified or registered mail, first class, return receipt requested, to the parties as follows:

To the Employer: Tallahassee Memorial HealthCare, Inc.
1300 Miccosukee Road
Tallahassee, FL 32308
Attn: Executive Director, Practice Management

With a copy to: E. Murray Moore, Jr.
Pennington, Moore, Wilkinson, Bell & Dunbar, P.A.
215 South Monroe, Floor 2
Tallahassee, FL 32301

To the Physician: At his/her address on the records of TMH

5.2 **Assignment.** Neither Party shall have the right or power to assign this Agreement or any of the rights or obligations set forth herein to any third party, and any attempted or purported assignment shall be null and void.

5.3 **Binding on Successors and Assigns.** Subject to paragraph 5.2, this Agreement shall be binding upon and inure to the benefit of the Parties and their respective heirs, personal representatives, successors, and permitted assigns.

5.4 **Cumulation of Remedies.** The various rights, options, elections, powers, and remedies of the Parties set forth in this Agreement are in addition to any others the Parties may be entitled to by law.

5.5 **Severability.** The provisions of this Agreement shall be deemed severable, and if any provision is held invalid, illegal, or unenforceable for any reason, the remainder of the Agreement shall be effective and binding on the Parties.

5.6 **Entire Agreement.** This Agreement and all Exhibits attached hereto constitute the entire agreement between the Parties with respect to Physician's employment. The Parties expressly acknowledge and warrant that any and all other existing employment agreements between the Parties shall terminate immediately upon execution of this Agreement, that this Agreement supersedes all previous employment agreements between the Parties, and that there are no other agreements, representations or warranties between the Parties with respect to Physician's employment other than those set forth in this Agreement.

5.7 **Amendments.** This Agreement may be amended at any time by mutual agreement of the Parties with or without additional consideration, provided that any amendment must be in writing and signed by both Parties.

5.8 **Headings.** The headings contained in this Agreement are for convenience only and shall in no way be deemed a part of this Agreement or affect its interpretation.

5.9 **Waiver.** The waiver of any right, power or remedy by either Party must be in writing. The delay or failure of a Party to exercise any right, power or remedy under this Agreement shall not be deemed a waiver of such right, power or remedy. The waiver of a right, power or remedy by one Party shall not constitute the waiver of that same right, power or remedy by the other.

5.10 **Exhibits.** All exhibits referenced in this Agreement are expressly incorporated into the Agreement.

5.11 **Governing Law and Venue.** This Agreement shall be governed by and construed in accordance with the laws of the State of Florida irrespective of any state's choice of law principles. Venue shall be proper in Leon County, Florida.

5.12 **Attorneys' Fees.** The prevailing Party in any litigation arising out of this Agreement shall be entitled to payment of its reasonable attorneys' fees and costs by the other Party.

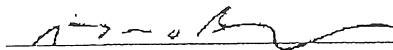
5.13 **No Joint Venture.** Both Parties agree and acknowledge that the relationship between the Parties is that of employer-employee and that neither party is a partner, agent, or joint venturer of the other.

5.14 **No Third Party Rights.** This Agreement has been made to benefit solely TMH and Physician and their respective successors and permitted assigns. Nothing in this Agreement is intended to confer any rights or remedies under this Agreement on any other party; however, nothing in this Agreement is intended to relieve or discharge the obligation or liability of any third party to TMH or Physician.

5.15 **Counterparts.** This Agreement may be executed in several counterparts, each of which when so executed shall be deemed to be an original, and such counterparts shall together constitute one and the same instrument. Fax copies, photocopies or scanned copies of this signed Agreement are as binding and legally enforceable as a signed original.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective as of the day and year first above written.

TALLAHASSEE MEMORIAL HEALTHCARE, INC.


G. MARK O'BRYANT, President and CEO

(CORPORATE SEAL)
"TMH"


COLBY REDFIELD, M.D.

EXHIBIT 1.1(a)
SERVICES

1. Physician shall provide, and shall cause Physician Extenders to provide, all medically necessary professional patient care and clinical services to patients receiving services through the TMH Emergency Center as are consistent with the Physician's and/or the Physician Extenders' licensure, clinical specialty, medical staff privileges and practice and training. "Physician Extenders" means physician assistants and advanced registered nurse practitioners providing services in the Emergency Center.

2. Physician shall sufficiently supervise and/or collaborate with the Physician Extenders as required by all applicable laws, rules, and regulations, including but not limited to policies, procedures and other guidelines issued by Medicare, Medicaid and/or other third party payors and the policies and procedures of TMH and other applicable programs.

3. Physician shall appropriately supervise any TMH personnel who render, or who assist in rendering, services in the Emergency Center in accordance with both TMH's policies and procedures and all applicable laws and regulations.

4. Physician shall ensure timely completion of all records (including billing records and patient medical records) relating to all professional services provided under this Agreement.

5. Physician shall ensure timely preparation and maintenance of all reports, claims, and correspondence necessary or appropriate to the performance of the Services under this Agreement.

6. Physician shall attend professional conventions, post-graduate seminars and continuing medical education programs necessary to maintain and enhance Physician's professional skills, and shall participate in professional societies as mutually agreed upon by the Parties.

7. Physician shall reasonably promote the professional practice of the Emergency Center and of TMH.

8. Physician shall cooperate with TMH in the event of a claim, threatened claim, or litigation involving Physician and/or the Services.

9. Physician shall assist TMH in satisfying the requirements of third party payors by, for example, participation in utilization review, peer review, and quality assurance programs related to the Services.

10. Physician shall cooperate with TMH to further TMH's charitable mission by assisting in community health and wellness education, participating in community service activities, and treating indigent and charity care patients, including patients covered by Medicaid and other state health programs.

11. Physician shall cooperate with TMH in obtaining reimbursement from third party payors, including Medicare and Medicaid, insurance companies, health maintenance organizations, and health benefit plans.

12. Physician may, but shall not be required to, participate in a TMH-approved clinical clerkship program through which Physician supervises medical school students in accordance with Rule 15B8-15.001, et seq., Florida Administrative Code, and all other applicable laws and regulations and TMH policies and procedures. In the event that Physician elects to participate in a TMH-approved clinical clerkship program, Physician shall notify the Medical Director of Emergency Medicine of both (a) his or her participation in such program and (b) any semester during which Physician will be supervising medical school students on TMH premises. The Physician shall also provide a copy of any agreement(s) entered into by the Physician and the medical school.

EXHIBIT 1.2(a) – COMPENSATION

Hourly Compensation

1. Physician shall be paid hourly compensation in the amount of [REDACTED] DOLLARS AND 00/100 [REDACTED] per hour for hours worked during a Day Shift in performing the Services during the first Contract Year of this Agreement. Physician shall be paid hourly compensation in the amount of [REDACTED] AND 00/100 [REDACTED] per hour for hours worked during a Day Shift in performing the Services on or after the first Contract Year of this Agreement. Physician shall be paid an hourly rate in the amount of [REDACTED] DOLLARS AND 00/100 [REDACTED] per hour for hours worked during a Night Shift in performing the Services during the first Contract Year of this Agreement. Physician shall be paid an hourly rate in the amount of [REDACTED] DOLLARS AND 00/100 [REDACTED] per hour for hours worked during a Night Shift in performing the Services on or after the first Contract Year of this Agreement. The following shifts shall be "Night Shifts" for purposes of this Agreement: the shift beginning at 7:30 p.m. and ending at 5:30 a.m.; the shift beginning at 9:00 p.m. and ending at 7:00 a.m.; the shift beginning at 10:00 p.m. and ending at 7:00 a.m.; and as otherwise mutually agreed to by the parties. All other shifts shall be "Day Shifts" for the purposes of this Agreement. Physician's hourly compensation shall be paid biweekly, in accordance with TMH's usual twenty-six (26) pay periods per year.

wRVU Compensation

2. Physician shall be paid Work Relative Value Unit ("wRVU") compensation as follows:

- (a) A "wRVU" is the measure of value used for physician services in the 2009 Medicare resource based relative value system.
- (b) Physician shall be paid [REDACTED] DOLLARS AND 90/100 [REDACTED] per wRVU (the "wRVU rate") for services personally performed by Physician or a Physician Assistant or an Advanced Registered Nurse Practitioner who is under the direct supervision of the Physician. All wRVUs for designated health services as defined in 42 U.S.C. § 1395nn, as amended, shall not be considered in computing Physician's wRVU compensation.
- (c) The wRVU compensation shall be paid monthly within thirty (30) days after the close of the month in which the Services are performed.
- (d) The wRVU rate may be adjusted by TMH from time to time upon one hundred and twenty (120) days' written notice to Physician.

- (e) Physician shall be compensated for the performance of all medical services that are (1) medically necessary, (2) properly documented, and (3) having a valid Current Procedural Terminology Code ("CPT") which are covered in accordance with Medicare Rules and Regulations, whether or not TMH is reimbursed for the performed CPT Code.

Quality Metric Compensation

3. In addition to the Hourly Compensation and wRVU Compensation, Physician shall also be paid for meeting the Quality Metrics.

(a) During the initial six (6) months of the Initial Term (as defined in Section 2.1(a)), TMH, in consultation with the Medical Director of Emergency Medicine ("Medical Director"), will develop quality metrics (to cover goals that are consistent with quality patient care which advance the mission statement and goal of TMH) for the Physician (the "Quality Metrics"). The Quality Metrics will cover the remaining months of the first Contract Year(s) (as defined in Section 2.1(a)) of this Agreement and will be established and distributed to Physician at least sixty (60) days prior to the commencement of the seventh (7th) month of the Initial Term of this Agreement. At least three months prior to expiration of the second Contract Year and each Contract Year thereafter, TMH, in consultation with the Medical Director, will develop updated Quality Metrics for each Contract Year. TMH shall ensure that the updated Quality Metrics are established and distributed to Physician at least sixty (60) days prior to the commencement of each such Contract Year. TMH agrees that the Quality Metrics will (i) be consistent with, but not limited to, applicable metrics set by the Centers for Medicare and Medicaid Services ("CMS"), commercial payors and any other nationally recognized body that develops metrics that measure quality in patient services and in an emergency medicine practice, (ii) set forth benchmarks against which Physician's performance can be measured or compared, to the extent possible, and (iii) set forth the amount of compensation that will be payable upon Physician's attainment of a certain achievement level relating to the applicable metric. Notwithstanding anything in this Agreement to the contrary, Physician agrees that TMH will have final authority with respect to determining the Quality Metrics, as well as the achievement level that must be attained by the Physician in order for the Physician to receive any compensation pursuant to paragraph (3)(c) of Exhibit 1.2(a) of this Agreement. TMH shall, upon Physician's request, provide the Physician reasonable access to the data utilized for the Quality Metrics to enable Physician to review TMH's determination and calculation of the Metric Compensation.

(b) During the first six months of the Initial Term of Agreement, Physician shall be paid [REDACTED] DOLLARS AND 00/100 [REDACTED] per wRVU for services personally performed by Physician or a Physician Assistant or an Advanced Registered Nurse Practitioner who is under the direct supervision of the Physician.

(c) After the initial six (6) months of the Initial Term of this Agreement, subject to the provisions of this Paragraph 3(c), TMH shall pay Physician an amount equal to [REDACTED] DOLLARS AND 00/100 [REDACTED] per wRVU (the "Quality Metric wRVU rate") generated during

such Contract Quarter. During the Initial Term (after the initial six (6) such months) and for any Renewal Term of this Agreement, within thirty (30) days of the expiration of each Contract Quarter (each, a "Quality Review Period"), TMH shall review whether Physician has met the Quality Metrics applicable to such Quality Review Period and shall provide Physician data that TMH reviewed in determining whether Physician met the Quality Metrics. Physician shall receive Quality Metric Compensation based upon whether and to what extent the Quality Metrics, as applicable, have been met based on the mechanisms set forth in the Quality Metrics. Quality Metric Compensation shall be prorated in the event of less than full compliance with the target Quality Metrics as set forth in the Quality Metrics. For instance, if there are four Quality Metrics and the goal is met or exceeded for three of the Quality Metrics during the Quality Review Period, then 75% of the Quality Metric Compensation will have been earned. Quality Metric Compensation, if any, shall be payable within forty-five (45) days after the end of each Quality Review Period for any metrics that are capable of being measured within such a Quality Review Period. No Quality Metric Compensation shall be paid if this Agreement terminates or is terminated prior to the end of a Contract Quarter; provided, however, that if Physician terminates this Agreement for cause or if TMH terminates without cause, then Physician shall receive his allocable percentage of Quality Metric Compensation, if any, calculated by TMH on a prorated basis based on the performance during the portion of the applicable calculation period ending on the effective date of termination, and TMH shall pay such reduced amount, if any, within ninety (90) days after the effective date of termination.

Signing Bonus

4. Physician shall receive a signing bonus in the amount of [REDACTED] AND 00/100 DOLLAR [REDACTED], less all applicable withholdings, payable within (thirty) 30 days after successfully passing criminal background and federal health program exclusion screening in accordance with TMH policies and procedures. In the event that Physician voluntarily terminates his/her employment with TMH for any reason whatsoever before the first anniversary of this Agreement, if the Physician does not commence employment for any reason, or if Physician's employment with TMH is terminated by TMH for cause before the first anniversary of this Agreement, Physician will repay to TMH an amount equal to the signing bonus of [REDACTED] within thirty (30) days after termination of the Agreement, or such amount may be deducted by TMH from amounts otherwise owed to the Physician under the Agreement through the date of termination.

Exhibit 1.2(h) – Benefits

Physician shall be entitled to the following benefits:

- 1) Health Insurance (at least 1,335 hours worked to qualify – no proration; Physician is eligible to participate on the same terms as all other TMH employees).
- 2) TMH Group Long-Term Disability Insurance (at least 890 hours worked to qualify; TMH will reimburse up to [REDACTED]).
- 3) TMH Group Life Insurance [REDACTED].
- 4) Participation in the TMH 401(a) Defined Contribution Benefit Pension Plan.
- 5) Voluntary participation in the TMH 403(b) and 457(b) Plan.
- 6) Parking.
- 7) Payment by TMH of the following:
 - a) Florida Medical License Application and Renewal Fees;
 - b) DEA License Application and Renewal Fees;
 - c) American Board Certification Fees;
 - d) Neurological Injury Compensation Dues;
 - e) TMH Medical Staff Credentialing Dues.
- 8) Continuing Medical Education, Professional Dues & Subscriptions.
 - a) Reimbursement of up to [REDACTED] per year in the aggregate for continuing medical education, professional dues, and subscriptions. The Physician must be scheduled to work at least 890 hours in a Contract Year to qualify for this reimbursement. Such reimbursement is subject to proration based on a projection of the hours that will be scheduled for Physician to work during a Contract Year. The projection of scheduled worked hours shall be determined by the Medical Director in advance of each Contract Year and such projection shall remain unchanged during the Contract Year. The projected schedule of worked hours (not to exceed 1,780 hours) shall be divided by 1,780 hours to determine the percentage of full-time equivalence ("FTE value") assigned to the Physician. This FTE value shall be used to prorate the funds available for CME, dues & subscriptions. Furthermore, in the event the contract is terminated during a Contract Year, CME, dues & subscriptions shall be further prorated for the number of months worked during the Contract Year divided by twelve (12) months. The FTE value shall be updated annually at least sixty (60) days prior to the commencement of each Contract Year.

- b) Physician must provide TMH with receipts or other appropriate documentation of any costs prior to receiving reimbursement for such costs. Such receipts or documentation must be provided to TMH within sixty (60) days after the costs are incurred.

EXHIBIT 1.2(c) – RELOCATION

1. TMH shall pay the Physician's reasonable deductible, moving expenses, as defined in IRS Publication 521 Moving Expenses not to exceed [REDACTED] AND 00/100 DOLLARS [REDACTED], which are related to the Physician's relocation and move to the Community. Such reasonable moving expenses may include actual moving expenses of household goods and travel expenses for Physician and Physician's spouse associated with two (2) trips to the Community. The travel expenses associated with each trip shall not exceed [REDACTED] AND 00/100 DOLLARS [REDACTED], or a total of [REDACTED] AND 00/100 [REDACTED] of the moving expenses. The Physician must present all receipts and documentation to TMH's satisfaction prior to being reimbursed for such reasonable moving expenses.

2. In the event that Physician does not begin the full-time practice of medicine as contemplated herein by the Commencement Date, Physician shall immediately repay Hospital for any moving expenses advanced or expended pursuant to this Exhibit 1.2(c), along with interest calculated at one percent (1%) over the prime rate published in the most recent edition of The Wall Street Journal as of the date of such advances or expenditures.

FIRST AMENDMENT TO EMPLOYMENT AGREEMENT

THIS FIRST AMENDMENT (the "First Amendment") is entered into and effective as of the ^{January} 25th day of November, 2017 by and between Tallahassee Memorial HealthCare, Inc. ("TMH") and Colby Redfield, M.D. (the "Physician").

WHEREAS, the parties executed an Employment Agreement dated November 20, 2015 (the "Agreement"); and

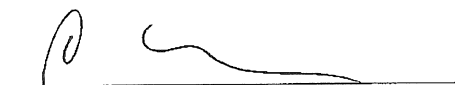
WHEREAS, the parties desire to amend the Agreement to provide that, in addition to the other duties provided by Physician, Physician shall also serve as the Medical Director of Emergency Medical Transport ("EMT") Services for TMH.

NOW THEREFORE, in consideration of the mutual promises, terms and covenants contained herein, the parties agree as follows:

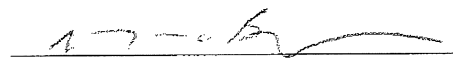
1. Effective as of the date of this First Amendment, Physician serve as the Medical Director of EMT Services for TMH.
2. The modifications and substitutions described above are hereby incorporated into the Agreement, as previously amended, as if fully set forth therein. All other terms and conditions of the Agreement not otherwise modified hereby shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this First Amendment effective as of the day and year first above written.

PHYSICIAN


COLBY REDFIELD, M.D.

TALLAHASSEE MEMORIAL
HEALTHCARE, INC.


G. MARK O'BRYANT, President/CEO



Prehospital Protocols

January 2018



Pediatric



**Tallahassee Memorial
Hospital**

Tallahassee Memorial HealthCare

Tallahassee Memorial Emergency Medical Services



INTRODUCTION

The purpose of protocols and procedures for Tallahassee Memorial Hospital EMS is to establish guidelines between EMS administration, the EMS provider and medical director for the management, treatment, and transport of specific medical emergencies.

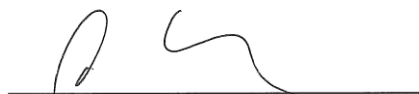
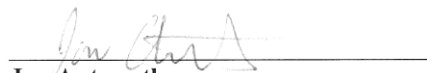
Pursuant to the Florida Administrative Code 64J-1.004(4)(a). The Medical Director responsibilities include developing medically correct standing orders or protocols which permit specified ALS and BLS procedures when communication cannot be established with a supervising physician or when any delay in patient care would potentially threaten the life or health of the patient.

Authorization for EMS personnel to provide pre-hospital medical care comes directly from the State approved Medical Director.

Tallahassee Memorial EMS providers are authorized to perform only pursuant to the written or verbal authorization of the department's medical director or medical control. We will measure up to the high standard required of emergency medical services only by, working together, and maintaining a high degree of professionalism.

The protocols set forth are not designed nor intended to limit the EMS provider in the exercise of good judgment or initiative in taking reasonable action in extraordinary circumstances. These protocols are intended to assist in achieving excellent, consistent prehospital care for patients. These protocols have been developed using the currently accepted standards of care, Leon County Medical Protocols, and *The American Heart Association 2017 Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care*,

The following protocols are not intended to provide a solution to every problem which may arise. Prehospital care is a shared responsibility between the medical director, physician medical control, and the EMS provider. All EMS personnel are required to use the protocols appropriate to their certification and training level.


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January 6, 2018

Reviewed & Revised: July 1, 2009
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Reviewed & Revised: March 1, 2016
Reviewed & Revised: February 23, 2017
Reviewed & Revised: January 6, 2018

Tallahassee Memorial

Emergency Medical Services

Reviewed & Revised June 15, 2013

Reviewed & Revised March 1, 2016

Reviewed January 6, 2018



3. Pediatric Protocols

3.1 Pediatric Initial Assessments and Management

- 3.1.1 Initial Assessment
- 3.1.2 Airway Management
- 3.1.3 Medical Supportive Care
- 3.1.4 Trauma Supportive Care
- 3.1.5 Pain Management

3.2 Pediatric Respiratory Emergencies

- 3.2.1 Airway Obstruction
- 3.2.2 Upper Airway (Stridor/ Croup/Epiglottitis)
- 3.2.3 Lower Airway (Wheezing/ Asthma/ Bronchospasm)

3.3 Pediatric Cardiac Dysrhythmias

- 3.3.1 Asystole
- 3.3.2 Bradycardia
- 3.3.3 Narrow Complex Tachycardia (Unstable Sinus Tach/ Stable SVT, Unstable SVT)
- 3.3.4 Pulseless Electrical Activity (PEA)
- 3.3.5 Wide Complex Tachycardia with a Pulse (V-Tach) Stable and Unstable
- 3.3.6 Wide Complex Tachycardia without a Pulse (V-fib/ pulseless V-Tach)
- *** Peds V-Tach/V-Fib Algorithm

3.4 Newborn/ Infant Cardiopulmonary Arrest

- 3.4.1 Newborn Resuscitation
- 3.4.2 Sudden Infant Death Syndrome (SIDS)

3.5 Pediatric Neurologic Emergencies

- 3.5.1 Altered Level of Consciousness (Altered Mental Status)
- 3.5.2 Seizure Disorder

3.6 Pediatric Toxicology Emergencies

- 3.6.1 Pediatric Ingestion (Overdose)
- 3.6.2 Bites and Stings
- 3.6.3 Carbon Monoxide Poisoning
- 3.6.4 Organophosphate Poisoning



3.7 Pediatric Other Medical Emergencies

- 3.7.1 Allergic Reaction/ Anaphylaxis
- 3.7.2 Diabetic Emergencies
- 3.7.3 Non-Traumatic Abdominal Pain
- 3.7.4 Non-Traumatic Chest Pain
- 3.7.5 Violent and/or Impaired Patient
- 3.7.6 Suspected Child Abuse
- 3.7.7 Sickle Cell Anemia
- 3.7.8 Pediatric Fever
- 3.7.9 Peds Hyperkalemia

3.8 Pediatric Environmental Emergencies

- 3.8.1 Near Drowning
- 3.8.2 Heat Related Emergencies
- 3.8.3 Cold Related Emergencies
- 3.8.4 Barotraumas / Decompression Illness- Dive Injuries
- 3.8.5 Electrical Emergencies

3.9 Pediatric Trauma Emergencies

- 3.9.1 Head and Spine Injuries
- 3.9.2 Eye Injuries
- 3.9.3 Chest Injuries
- 3.9.4 Abdomino-Pelvic Injuries
- 3.9.5 Extremity Injuries
- 3.9.6 Traumatic Arrest
- 3.9.7 Burn Injuries

3.10 Pediatric with Special Healthcare Needs

- 3.10.1 Home Mechanical Ventilators
- 3.10.2 Tracheostomy
- 3.10.3 Central Venous Lines
- 3.10.4 Feeding Tubes



Pediatric Protocols Overview

3.1 Pediatric Initial Assessment and Management

Introduction:

Protocols in Section 3.1 are designed to guide the EMT or paramedic in his or her initial approach to assessment and management of pediatric patients. The **Basic Level care** is specified as EMT and Paramedic (BLS) and **Level 1** is Paramedic only (ALS). **ALS Level 2** designates medical control orders.

Protocol [3.1.1 Initial Assessment](#) should be used on all pediatric patients for initial assessment. During this assessment, if the paramedic determines that there is a need for airway management, Protocol [3.1.2 Airway Management](#) should be used for the management of the pediatric airway. These protocols are frequently referred to by other protocols, which may or may not override them in recommending more specific therapy.

Protocol [3.1.3 Medical Supportive Care](#) presents the basic components of preparation for transport of medical patients. Due to the significant differences in priorities and packaging in the pre-hospital care of trauma and hypovolemia cases, a separate Trauma Supportive Care protocol has been developed. After following Protocol [3.1.1 Initial Assessment](#), this Medical Supportive Care protocol may be the only protocol used in medical emergency situations where a specific diagnostic impression and choice of additional protocol(s) cannot be made. Judgment must be used in determining whether patients require ALS or BLS level care. This protocol is frequently referred to by other protocols, which may or may not override it in recommending more specific therapy.

Protocol [3.1.4 Trauma Supportive Care](#) presents the basic components of preparation for transport of trauma patients. Due to the significant differences in priorities and packaging in the pre-hospital care of medical cases, a separate Medical Supportive Care protocol has been developed. After following Protocol 3.1.1, this Trauma Supportive Care protocol may be the only protocol used in trauma or hypovolemia situations where a specific diagnostic impression and choice of additional protocol(s) cannot be made. Judgment must be used in determining whether patients require ALS or BLS level care. This protocol is frequently referred to by other protocols, which may or may not override it in recommending more specific therapy.

Paramedics only for pain management should use protocol 3.1.5.

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Overview of Evaluating and Managing Pediatric Emergencies:

1. Remember that children are not small adults. Treatments vary as do drug dosages and fluid administration rates.
2. Cardiac arrest in children is not a sudden event. It is almost always due to a respiratory problem, which leads to hypoxia, bradycardia, and eventually asystole. Ventricular fibrillation is a rare event in children. Initial treatment should be directed at establishment of an airway, administration of supplemental oxygen, and mechanical ventilation.
3. EOAs, EGTAs, PTL airways, and esophageal combitubes should not be used in children. The preferred method of airway management is endotracheal intubation. Demand valves should not be used in children because of the tendency to cause barotrauma.
4. The intraosseous route of fluid and medication administration is available in children less than 6 years of age.
5. Blood pressure is a late sign of shock in children. Instead, you should evaluate end-organ perfusion.

Anticipating Cardiopulmonary Arrest

All sick children should undergo a rapid cardiopulmonary assessment. The goal is to answer the question, "***Does this child have pulmonary or circulatory failure that may lead to cardiopulmonary arrest?***" Recognition of the physiologically unstable infant is made by physical examination alone. Children who should receive the rapid cardiopulmonary assessment include those with the following conditions.

- Respiratory rate greater than 60
- Heart rate greater than 180 or less than 80 (under 5 years)
- Heart rate greater than 180 or less than 60 (over 5 years)
- Respiratory distress
- Trauma
- Burns
- Cyanosis
- Altered level of consciousness
- Seizures
- Fever with petechiae (small skin hemorrhages)



Rapid Cardiopulmonary Assessment

The rapid cardiopulmonary assessment is designed to assist you in recognizing respiratory failure and shock, thus anticipating cardiopulmonary arrest. The rapid cardiopulmonary assessment follows the new basic ABCs (or CAB) of CPR.

Airway Patency

Inspect the airway and ask yourself the following questions.

- Is the airway patent?
- Is it maintainable with head positioning, suctioning, or airway adjuncts?
- Is the airway unmaintainable? If so, what action is required?

(Endotracheal intubation, removal of a foreign body, and so on)

Breathing

Evaluation of breathing includes assessment of the following conditions.

- Respiratory rate. Tachypnea is often the first manifestation of respiratory distress in infants. An infant breathing at a rapid rate will eventually tire. Thus, a decreasing respiratory rate is not necessarily a sign of improvement. A slow respiratory rate in an acutely ill infant or child is an ominous sign.
- Air entry. Observing for chest rise, breath sounds, stridor, or wheezing can assess the quality of air entry.
- Respiratory mechanics. Nasal flaring and use of the accessory respiratory muscles is evidence of increased work of breathing in the infant and child.
- Color. Cyanosis is a fairly late sign of respiratory failure and is most frequently seen in the mucous membranes of the mouth and the nail beds. Cyanosis of the extremities alone is more likely due to circulatory failure (shock) than respiratory failure.

Circulation

The cardiovascular assessment consists of the following procedures.

- Heart rate. Infants develop sinus tachycardia in response to stress. Thus, any tachycardia in an infant or child requires further evaluation to determine the



cause. Bradycardia in a distressed infant or child may indicate hypoxia and is an ominous sign of impending cardiac arrest.

- Blood pressure. Hypotension is a late and often sudden sign of cardiovascular decompensation. Even mild hypotension should be taken seriously and treated quickly and vigorously, since cardiopulmonary arrest is imminent.
- Peripheral circulation. The presence of pulses is a good indicator of the adequacy of end-organ perfusion. The pulse pressure (the difference between the systolic and diastolic blood pressure) narrows as shock develops. Loss of central pulses is an ominous sign.
- End-organ perfusion. The end-organ perfusion is most evident in the skin, kidneys, and brain. Decreased perfusion of the skin is an early sign of shock. A capillary refill time of greater than 2 seconds is indicative of low cardiac output. Impairment of brain perfusion is usually evidenced by a change in mental status. The child may become confused or lethargic. Seizures may occur. Failure of the child to recognize the parents' faces is often an ominous sign. Urine output is directly related to kidney perfusion. Normal urine output is 1-2 ml/kg/hr. urine flow of less than 1 ml/kg/hr is an indicator of poor renal perfusion.

The rapid cardiopulmonary assessment should be repeated throughout initial assessment and patient transport. This will help you determine whether the patient's condition is deteriorating or improving. Any decompensation or change in the patient's status should be immediately treated.



3.1.1 Initial Assessment

Purpose: The initial assessment of the pediatric patient will vary with the age of the patient. However, there are some initial components of assessment that are consistent with all patients, regardless of age. The paramedic or EMT should follow the appropriate approach to patient assessment with respect to the patient's age. In addition to the patient, the parents or caregiver may be needed to gain information needed for a complete assessment of the patient.

Procedure:

Basic Level: EMT and PARAMEDIC

1. Scene Size-up.

- A. Review of Dispatch Information.
- B. Assess Need for Body Substance Isolation.
- C. Assessment of Scene Safety.
- D. Determine Mechanism of Injury.
- E. Determine Number and Location of Patients.
- F. Determine Need for Additional Resources.
- G. Observe Environment of Pediatric Patient.

2. Pediatric Assessment Triangle - Rapid Cardiopulmonary Assessment.

- A. Appearance.
 - 1. Alertness.
 - 2. Distractibility.
 - 3. Consolability.
 - 4. Eye Contact.
 - 5. Speech/Cry.
 - 6. Spontaneous motor activity.
 - 7. Color.
- B. Work of Breathing.
 - 1. Appearance (as above).
 - 2. Use of accessory muscles.
 - a. Intercostal and/or supraclavicular retractions.
 - b. Diaphragmatic breathing (see-saw type breathing).
 - 3. Respiratory rate.
 - 4. Tidal volume (chest expansion).
 - 5. Other signs of respiratory distress.
 - a. Nasal flaring.
 - b. Grunting.
 - c. Cyanosis.



- C. Circulation to Skin.
 - 1. Strength of pulses (central vs. peripheral).
 - 2. Color and temperature of extremities (central vs. peripheral).
 - 3. Capillary refill time.
 - 4. Pulse rate.
 - 5. Blood pressure (may be difficult to assess in infants).
- 3. **Initial Assessment.**
 - A. Assess Airway, C-Spine and Initial Level of Consciousness (AVPU).
 - B. Assess Breathing.
 - C. Assess Circulation and Presence of Hemorrhage.
 - D. Assess Disability - Movement of Extremities.
 - E. Expose and Examine Head, Neck, Chest, Abdomen, and Pelvis (check back when patient is rolled on side).
 - F. Identify Priority Patients.
- 4. **Initial Management** (see [Pediatric Protocol 3.1.3 - Medical Supportive Care](#) or [3.1.4 -Trauma Supportive Care](#)).
- 5. **Secondary Assessment.**
 - A. Conduct a Toe-to-Head Survey.
 - B. Neurological Assessment.
 - 1. Pupillary Response.
 - 2. Pediatric Glasgow Coma Score.
 - C. Repeat Assessment Triangle - Rapid Cardiopulmonary Assessment (as above).
 - D. Obtain a Medical History.
 - 1. S - Symptoms - Assessment of Chief Complaint.
 - 2. A - Allergies.
 - 3. M - Medications.
 - 4. P - Past Medical History.
 - 5. L - Last Oral Intake.
 - 6. E - Events Leading to Illness or Injury.
- 6. **Other Assessment Techniques.**
 - A. Cardiac Monitoring.
 - B. Glucose Determination
 - C. Pulse Oximetry



3.1.2 Airway Management

Purpose: Airway assessment and management is the most important and first order of business when patient contact is made (immediate removal from unsafe scene may on occasion trump airway management). An algorithm for general airway assessment/management provides a general overview and road map for the EMT/Paramedic to follow if needed. This algorithm will in turn direct the EMT/Paramedic to either a Non-breathing Airway Protocol or a Breathing Patient Airway Protocol. Once the airway is controlled/secured, attention can be given to the other medical/trauma problems and care directed according to the appropriate protocol.

NOTE: New 2010 ACLS guidelines recommend titrating the amount of oxygen delivered to maintain pulse ox $> 94\%$. If this can be done via nasal cannula then it is not necessary to use a 100% NRM.

Procedure:

Basic Level: EMT and PARAMEDIC

1. [Initial Assessment Protocol 3.1.1.](#)

2. If spontaneous breathing is present without compromise:

A. Monitor breathing during transport.

B. Administer oxygen PRN (Oxygen should only be administered and titrated to the patient that shows signs of respiratory compromise and/or is unable to maintain $SpO_2 \geq 94\%$).

1. Infants via infant mask @ 2-4 L/min.

2. Small child (1-8 years) via pediatric nasal cannula @ 2 – 4 L/min or pediatric face mask @ 6-8 L/min.

3. Older child (9-15 years) via nasal cannula @ 2 – 4 L/min, simple mask @ 4-6 L/min or non-rebreather mask @ 10-15 L/min.

4. If mask is not tolerated administer via blow-by method.

3. If spontaneous breathing is present with compromise:

A. Maintain airway (e.g. modified jaw thrust)

B. Suction PRN.

C. Administer oxygen and titrate to pulse ox of $> 94\%$.

1. Infants via infant mask @ 2-4 L/min.

2. Small child (1-8 years) via pediatric nasal cannula @ 2 – 4 L/min or pediatric mask @ 6-8 L/min.

3. Older child (9-15 years) via nasal cannula @ 2 – 4 L/min, simple mask @ 4-6 L/min or non-rebreather mask @ 10-15 L/min.

4. If mask is not tolerated administer via blow-by method.



- D. If unable to maintain airway, insert oropharyngeal or nasopharyngeal airway PRN.
 - E. Assist ventilations with BVM PRN.
 - F. Pulse oximeter, as soon as possible.
4. If spontaneous breathing is absent or markedly compromised:
- A. Maintain airway (e.g. modified jaw thrust).
 - B. Suction PRN.
 - C. If unable to maintain airway, insert oropharyngeal or nasopharyngeal airway.
 - D. Ventilate with BVM @ 20/minute for the child and 30/minute for the infant.
 - E. Monitor pulse oximetry and capnography or ETCO₂ monitoring device, as soon as possible.

ALS Level 1: PARAMEDIC ONLY

- A. Perform endotracheal intubation PRN and document the following (The BVM should be initially used for ventilatory support. Endotracheal intubation should only be used when the BVM is ineffective or prolonged ventilatory support is necessary).
 - (1) Confirm ETT placement (see confirmation protocol).
 - a. Negative epigastric sounds
 - b. Positive bilateral breath sounds
 - (2) Secure ETT with tape and bite block or commercial device.
 - a. Full spinal immobilization is recommended
 - (3) Attach end-tidal CO₂ monitoring device.
 - (4) Monitor SpO₂ with pulse oximeter.
- B. Insert Nasogastric tube and decompress stomach PRN (when gross gastric distension is noted, an NG tube should be inserted to relieve gastric distension that may be compromising ventilatory effort).
- C. If unable to intubate and patient cannot be adequately ventilated by other means, perform needle cricothyroidotomy and transport rapidly to the hospital.

ALS LEVEL 2: MEDICAL CONTROL

None



3.1.3 MEDICAL SUPPORTIVE CARE

Purpose: This protocol is used in conjunction with the [Initial patient Assessment Protocol](#).

Procedure:

Basic Level: EMT and PARAMEDIC

1. Initial Assessment Protocol 3.1.1.
2. [Airway Management Protocol 3.1.2](#).
3. Attach cardiac monitor and pulse oximeter if indicated
4. Keep patient warm (except if treating heat stroke, cool patient).

ALS LEVEL 1: PARAMEDIC ONLY

1. Monitor ECG PRN.
2. [Establish IV](#) (or [EZ-IO](#) if critical condition and in need of urgent fluids and/or drugs) of Normal Saline with regular infusion set PRN (a)(b)(c)(d), unless overridden by other specific protocol.
EMT and Paramedic
3. Establish hospital contact for notification of incoming patient and obtaining consultation for level 2 orders.

ALS Level 2: MEDICAL CONTROL

1. Contact medical control or medical director if any concerns or any questions.

Note:

- (a) Authorized IV routes include all peripheral venous sites. External jugular veins may be utilized when other peripheral site attempts have been unsuccessful or would be inappropriate. A large bore intracath should be used for unstable patients; avoid sites below the diaphragm.
- (b) A Buretrol, Volutrol, or Soluset should be used in lieu of a minibag when starting an IV on patients that are eight years old or less.
- (c) An IV lock or medication access point (MAP) may be used in lieu of an IV bag in some patients with intravenous lines, when appropriate
- (d) An EMT that has been authorized by their Medical Director may establish and IV.
- (e) When unable to establish an IV in the pediatric patient that needs to be resuscitated, an intraosseous line may be used by the paramedic only.



3.1.4 TRAUMA SUPPORTIVE CARE

Purpose: This protocol is used in conjunction with the Initial Assessment Protocol.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Assessment Protocol 3.1.1](#). Initiate trauma alert, if applicable.
2. [Airway Management Protocol 3.1.2](#). (manually stabilize c-spine PRN).
3. Correct any open wound/sucking chest wound (occlusive dressing).
4. Control hemorrhage
5. Immobilize C-spine and secure patient to backboard or Pediatric Immobilizer PRN (a)
6. Attach cardiac monitor and pulse oximeter if indicated
7. Expedite transport
8. The following steps should not delay transport:
 - a. Complete bandaging, splinting and packaging PRN
 - b. Establish hospital contact for notification of incoming patient and for the Paramedic to obtain consultation for level 2 orders
9. Keep patient warm.

ALS LEVEL 1: PARAMEDIC ONLY

1. Correct any massive flail segment that causes respiratory compromise (intubate)
2. Correct any tension pneumothorax with needle decompression as per protocol
3. [Establish IV](#) (or [EZ-IO](#) if critical condition and in need of urgent fluids and/or drugs) of Normal Saline with regular infusion set PRN (b)(c)(d), unless overridden by other specific protocol.
4. Monitor ECG PRN.



ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.

Note:

- (a) Infants and small children in car seats may be immobilized without removing them from the car seat, as long as it will not interfere with patient assessment and other needed procedures and car seat is intact. If patient is not in car seat on arrival, do not put patient back into car seat to immobilize; use backboard or pediatric immobilizer.
- (b) Authorized IV routes include all peripheral venous sites. External jugular vein may be utilized when other peripheral site attempts have been unsuccessful or would be inappropriate. Two IVs using large bore intracath should be used for unstable patients, avoid sites below the diaphragm. Rapid transport should not be delayed to establish an IV.
- (c) A Buretrol, Volutrol, or Soluset should be used in lieu of a regular infusion set when starting an IV on patients that are less than eight years old.
- (d) When unable to establish an IV in the pediatric patient that needs to be resuscitated, an intraosseous line may be used by the paramedic only.



3.1.5 PAIN MANAGEMENT

Purpose: This protocol is to be used for managing pain in pediatric patients with the following conditions:

- Isolated Extremity Fracture
- Acute back strain
- Soft tissue injuries, burns, bites and stings.
- Discomfort related to attached devices or inserted tubes such as a foley catheter, NG tube, chest tube, etc. This will apply to intra-facility transfers.

Do not use this protocol if there is multisystem trauma or hemodynamic instability. Keep in mind that severe back pain can sometimes be indicative of a condition that may require emergency surgery such as appendicitis, ruptured or dissecting aneurysm, ruptured ectopic pregnancy, etc. Be sure you do a good abdominal exam on patients complaining of back pain. If any abdominal tenderness is found, do not give pain med until advised by medical control or medical director. If patient has severe enough back pain that you are considering giving pain medication for, be sure the history is consistent with back strain, e.g. lifting heavy material and felt a pull. **DO NOT USE TORADOL ON ANY PATIENT THAT MAY REMOTELY BE GOING TO SURGERY**, e.g. fractured extremities, serious soft tissue injuries. If you're not sure, call med control for advice. Kidney stone patients may report a history of kidney stones and may or may not have hematuria (blood in urine). Always monitor respiratory status and pulse ox after administration of a narcotic. Intervene as needed to keep pulse ox $\geq 95\%$

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)

Isolated Extremity Fracture

The purpose of this procedure is to manage pain associated with isolated extremity fractures not associated with multisystem trauma or hemodynamic instability.

ALS LEVEL 1: PARAMEDIC ONLY

1. Patients should be asked to quantify their pain on an analog pain scale (0=least severe to 10=most severe) or Wong-Baker Faces Scale or Infant Behavior Score (a)(b). This should be documented and used to measure the effectiveness of analgesia.
2. Distal circulation, sensation and movement should be noted and recorded in the injured extremity.

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3. The extremity should be immobilized as described in [Adult Protocol Extremity Injuries](#).
4. Extremity fractures should be elevated, if possible, and cold applied.

ALS LEVEL 2: MEDICAL CONTROL

1. If pain persists and systolic BP is adequate (see [Appendix - Pediatric Vital Signs](#)), choose one of the following:
 - a. **Morphine Sulfate** may be given intravenously in increments every 3 – 5 minutes, titrated to pain to a maximum of 5 mg. Administer at a rate not to exceed 1 mg/min. Pediatric dose:
< 6 months; 0.05 – 0.2 mg/kg SUB-Q/IM/IV (avoid IM route if possible)
6 months- 12 yrs; 0.1-0.2 mg/kg IV/IM/SUB-Q.
 - b. **Fentanyl (Sublimaze)**
Pediatric dosage: 1-3 yrs old: 2 – 3 mcg/kg IV
3 – 12 yrs old: 1 – 2 mcg/kg IV
>12 yrs old: 0.5 – 1 mcg/kg IV

Acute Back Strain:

This procedure should be used in the isolated back strain where an acute abdominal process is not suspected.

ALS LEVEL 1: PARAMEDIC ONLY

1. Patients should be asked to quantify their pain on an analog pain scale (0=least severe to 10=most severe). This number should be documented and used to measure the effectiveness of analgesia.
2. Secure patient to back board PRN.

ALS Level 2: MEDICAL CONTROL

1. If pain persists and systolic BP is adequate (see [Appendix Pediatric Vital Signs](#)), give one of the following:
 - **Morphine Sulfate** may be given intravenously in increments every 3 – 5 minutes, titrated to pain to a maximum of 5 mg. Administer at a rate not to exceed 1 mg/min. Pediatric dose:
< 6 months; 0.05 – 0.2 mg/kg SUB-Q/IM/IV (avoid IM route if possible)
6 months- 12 yrs; 0.1-0.2 mg/kg IV/IM/SUB-Q.
 - **Fentanyl (Sublimaze)**

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Pediatric dosage: **1-3 yrs old:** 2 – 3 mcg/kg IV
3 – 12 yrs old: 1 – 2 mcg/kg IV
>12 yrs old: 0.5 – 1 mcg/kg IV

- If > 2 years of age, **Ketorolac Tromethamine (Toradol)** may be given 0.5 mg/kg (maximum 15mg) IV or 1 mg/kg (maximum 30 mg) IM

Soft Tissue Injuries, Burns, Bites and Stings

This procedure is used for pain associated with soft tissue injuries, burns, bites and stings not associated with multisystem trauma or hemodynamic instability.

ALS LEVEL 1: PARAMEDIC ONLY

1. Patients should be asked to quantify their pain on an analog pain scale (0=least severe to 10=most severe). This number should be documented and used to measure the effectiveness of analgesia.

ALS Level 2: MEDICAL CONTROL

1. If pain persists and systolic BP is adequate (see [Appendix Pediatric Vital Signs](#)), give one of the following:

- a. **Morphine Sulfate** may be given intravenously in increments every 3 – 5 minutes, titrated to pain to a maximum of 10 mg. Administer at a rate not to exceed 1 mg/min.

Pediatric dose:

< 6 months; 0.05 – 0.2 mg/kg SUB-Q/IM/IV (avoid IM route if possible)

6 months- 12 yrs; 0.1-0.2 mg/kg IV/IM/SUB-Q.

- b. **Fentanyl (Sublimaze)** Pediatric dose:

1-3 yrs old: 2 – 3 mcg/kg IV

3 – 12 yrs old: 1 – 2 mcg/kg IV

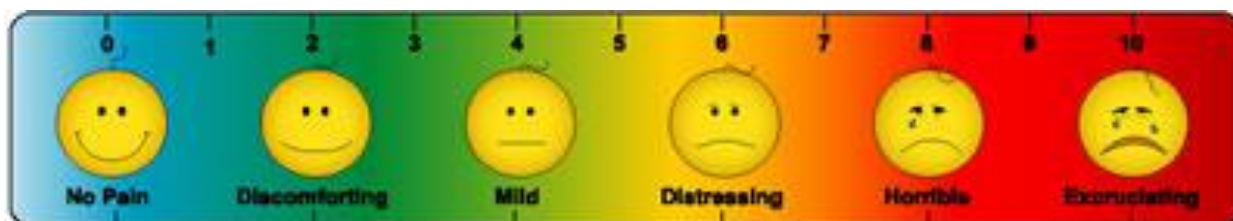
>12 yrs old: 0.5 – 1 mcg/kg IV

- c. If > 2 years of age, **Ketorolac Tromethamine (Toradol)** may be given 0.5 mg/kg (maximum 15mg) IV or 1 mg/kg (maximum 30 mg) IM



Note:

(a) Wong-Baker Facial Scale:



(b) Infant Behavior Score

Assessment of Behavior Score:

- 0 “Relaxed” – Infant comfortable, not distressed
- 1-2 Some transitory distress caused; returns immediately to “relaxed”.
- 3-4 Transitory distress, likely to respond to consolation
- 5 Infant experiences pain; if no response to consolation, may require analgesia.
- 6 “Anguished” and “exaggerated” – infant experiencing acute pain; is unlikely to respond to consolation, will probably benefit from analgesia.
- 6-8 “Inert”- (no response to traumatic procedure) infant is habituated to pain; will not respond to consolation; systematic pain control by analgesia should be considered.

Infant Behavior Score:

Facial Expression

- 0 “relaxed” Smooth muscled; relaxed expression; either in deep sleep or quietly alert.
- 1 “anxious” Anxious expressions; frown; REM behind closed lids; wandering gaze; eyes narrowed; lips parted; pursed lip as if “oo” is pronounced.
- 2 “anguished” Anguished expression/crumped face; brow bulge; eye-squeeze; nasolabial furrow pronounced; square-stretched mouth; cupped tongue; “silent cry”
- 3 “inert” (Only during or immediately after traumatic procedure) no response to trauma; no crying; rigidity; gaze avoidance; fixed/staring gaze; apathy; diminished alertness

Body Movement

- 0 “relaxed” Relaxed trunk and limbs; body in tucked position; hands in cupped position or willing to grasp a finger
- 1 “restless” Moro reflexes; startles; jerky or uncoordinated movement of limbs; flexion/extension of limbs; attempt to withdraw limb from site of injury.



2 “exaggerated” Abnormal position of limbs; limb/neck extension; splaying of fingers and/or toes; flailing or thrashing of limbs; arching of back; side swiping/guarding site of injury

3 “inert” (Only during or immediately after traumatic procedure) no response to trauma; inertia; limpness/rigidity; immobility

Color

0 Normal skin color (depending on skin type)

1 Redness; congestion

2 Pallor; mottling; grey

(c)

Extreme caution should be used with administering Morphine to a patient with an $\text{SpO}_2 < 95\%$

(d)

Toradol is contraindicated in the following patients:

1. Potential surgical candidate (e.g. trauma patient)
2. Known allergies to nonsteroidal anti-inflammatory drugs (e.g. aspirin, ibuprofen)
3. History of nasal polyps
4. Angioedema
5. Bronchospastic reactivity (e.g. asthma)
6. Kidney dysfunction



3.2

PEDIATRIC RESPIRATORY EMERGENCIES



3.2 PEDIATRIC RESPIRATORY EMERGENCIES

Overview: Most children requiring urgent intervention have primary respiratory problems. 80-90% of all pediatric cardiac arrests originate in the respiratory system. When the child in respiratory distress can no longer compensate, respiratory failure will be followed by cardiac failure. It is crucial to recognize respiratory distress and dysfunction early, so that cardiopulmonary failure may be prevented. Note that the respiratory system is also used to compensate for the hypoxia and acidosis found in primary circulatory failure. Assessment of the pediatric respiratory system should focus not on clinical status, as reflected by general appearance (adequacy of cerebral oxygenation and ventilation) and work of breathing.

Components of Appearance

1. **Alertness:** How responsive and interactive is the child with a stranger or other changes in the environment? Is the patient restless, agitated or lethargic?
2. **Distractibility:** How readily does a person, object, or sound draw the child's interest or attention? Will the patient play with a toy or new object?
3. **Consolability** Can the patient be comforted by the caregiver or by the paramedic?
4. **Eye Contact** Does the child maintain eye contact with objects or people? Will the patient fix his/her gaze on a face?
5. **Speech/Cry** Is the speech/cry strong and spontaneous? Weak and muffled? Hoarse?
6. **Spontaneous Motor Activity** Is the patient moving and resisting vigorously and spontaneously? Is there good muscle tone and responsiveness?
7. **Color** Is the patient pink? Or is the patient pale, ashen, blue or mottled? Does the skin coloring of the trunk differ from that of the extremities?

Signs of Work of Breathing

1. **Use of Accessory Muscles** Pediatric patients will use accessory muscles early to compensate for deficiencies in perfusion. Intercostal and supraclavicular retractions, as well as diaphragmatic breathing (see-saw) may be very apparent.



2. **Respiratory Rate** Significant finding if >60/min. or <10-20/min.
3. **Tidal Volume** Inspection of chest wall movement may not be adequate for assessment of tidal volume. It is imperative to auscultate bilateral lung sounds to determine adequacy of tidal volume.
4. **Nasal Flaring** Flaring of the external nares indicates respiratory distress.
5. **Grunting** Grunting is an ominous sign associated with severe distress. It is caused by a premature closure of the glottis on exhalation due to atelectasis. The patient is attempting to maintain a positive end expiratory pressure (PEEP) to allow for better lung inflation.
6. **Cyanosis** Cyanosis is usually a late finding and will initially be visible around the mouth and gums (perioral) and nail beds.
7. **Pulse Oximeter** SpO₂ <90% is suggestive of respiratory insufficiency.
8. **Lung Sounds** Auscultation of bilateral lungs sounds not only assesses tidal volume but may uncover abnormal sounds (eg. wheezing, stridor, rales).

Specific treatments for the different causes of respiratory distress are outlined in the following protocols. When the paramedic is unsure as to which protocol to follow, he or she should follow the protocols in Section 3.1 and contact medical control for further direction.

References: Dieckmann, RA, et al: Pediatric Education for Paramedics, National PEP Task Force, 1995.

American Heart Association/American Academy of Pediatrics: Textbook of Pediatric Advanced Life Support, Dallas, 1994.

American Heart Association: Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: Supplement to Circulation 102: 8, 2000.



3.2.1 AIRWAY OBSTRUCTION

Purpose: Causes of upper airway obstruction include the tongue, foreign bodies, swelling of the upper airway due to angio-neurotic edema (see [Pediatric Protocol - Allergic Reactions/Anaphylaxis](#)), trauma to the airway, and infections {see [Pediatric Protocol - Upper Airway \(Stridor - Croup/Epiglottitis\)](#)}. Differentiation of the cause of upper airway obstruction is essential to determining the proper treatment.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. If air exchange is inadequate and there is a reasonable suspicion of foreign body airway obstruction (FBAO), apply abdominal thrust (a).
 - a. Child:
 - i. If conscious, ask, “Are you choking?”
 - ii. If patient unable to speak and/or shakes head yes, give abdominal thrust
 - iii. Repeat abdominal thrust until effective or patient become unconscious.
 - iv. If patient becomes unconscious, perform a tongue-jaw lift, visualize object and perform a finger sweep to remove object. Do not perform blind finger sweep.
 - v. Open airway and attempt to ventilate. If still obstructed, reposition airway and try to ventilate again.
 - vi. Give 5 abdominal thrusts
 - vii. Repeat steps iv through vi twice.
 - viii. If still unrelieved, go to ALS Level 1 Treatment.
 - b. Infant:
 - i. If conscious, determine airway patency
 - ii. If patient is unable to move air or has poor air exchange, give 5 back blows between the shoulder blades and then 5 chest thrusts with patient in a head dependent position
 - iii. Repeat back blows and chest thrusts until effective or patient becomes unconscious
 - iv. If patient becomes unconscious, perform a tongue-jaw lift and look in the mouth for the object. If object can be seen, remove the object.
 - v. Open airway and attempt to ventilate; if still obstructed, reposition airway and try to ventilate again.
 - vi. Give 5 back blows and 5 chest thrusts, with patient in a head dependent position.



- vii. Repeat steps iv. through vi. twice.
- viii. If still unrelieved, go to ALS Level 1 treatment

ALS LEVEL 1: PARAMEDIC ONLY

1. If unable to relieve FBAO, visualize with laryngoscope and extract foreign body with Magill forceps.
2. If obstruction is due to trauma and/or edema, or if uncontrollable bleeding into the airway causes life-threatening ventilatory impairment, perform endotracheal intubation
3. If unable to intubate and patient cannot be adequately ventilated by other means, perform needle cricothyroidotomy.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.

Note:

(a) If air exchange is adequate with a partial airway obstruction, do not interfere and encourage patient to cough up obstruction. Continue to monitor for adequacy of air exchange. If air exchange becomes inadequate continue with protocol.



3.2.2 UPPER AIRWAY (STRIDOR CROUP / EPIGLOTTITIS)

Purpose: **Stridor** is a high pitched "crowing" sounds caused by restriction of the upper airway. In addition to FBAO (see [Pediatric Protocol Airway Obstruction](#)), stridor can be caused by croup and epiglottitis.

Croup (laryngotracheobronchitis) is a viral infection of the upper airway, which causes edema/ inflammation below the larynx and glottis with a resultant narrowing of the lumen of the airway. Croup most often occurs in children 6 months to 4 years of age. The child with croup will have stridor, as well as, a distinctive barking cough and cold symptoms (low-grade fever (100-101 degrees F), with a gradual onset of respiratory distress.

Epiglottitis is an acute infection and inflammation of the epiglottis that potentially is life threatening. Since the availability of Hemophilus influenza, type B (Hib) vaccine, epiglottitis has markedly decreased, yet it may still occur from other bacterial pathogens. Epiglottitis usually occurs in children 4 years of age and older. The child with epiglottitis will present with stridor, as well as, acute respiratory distress, sore throat, pain upon swallowing which causes the distinctive drooling, high grade fever (102-104 degrees F), and may assume the classic tripod position.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#), including pulse oximeter (avoid IVs in these patients) (a).
2. Avoid agitating the child with suspected epiglottitis. Never examine the epiglottis (a).
3. Administer humidified oxygen. If humidified oxygen is unavailable, use nebulized saline (do not force oxygen mask on pediatric patient - use blow-by technique if necessary) (a).

ALS LEVEL 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.

Note:

- (a) Avoid any procedure that will agitate patient.



3.2.3 LOWER AIRWAY (WHEEZING ASTHMA / BRONCHIOLITIS)

Purpose: This protocol for pediatric patients with wheezing. Wheezing is a whistling type breath sound associated with narrowing or spasm of the smaller airways. Wheezing in the child under one year of age is usually the result of **bronchiolitis**, a viral infection of the bronchioles which causes prominent expiratory wheezing, clinically resembling asthma.

Asthma is a chronic inflammatory disease that is triggered by many different factors (e.g. environmental allergens, cold air, exercise, foods, irritants, and certain medications). Asthma has a two-phase response. The first phase is associated with a histamine release, which causes bronchoconstriction and bronchial edema. Early treatment with bronchodilators may reverse the bronchospasm. The second phase consists of inflammation of the bronchioles and additional edema. The second phase will usually not respond to bronchodilators. An anti-inflammatory medication (e.g. corticosteroid) is typically required. Assessment of the asthma patient usually includes a history of asthma with associated medications. The patient will be tachypneic and may have an unproductive cough. Use of accessory muscles is evident and wheezing may be heard, most commonly on expiration. In a severe asthma attack, the patient may not wheeze at all due to a lack of airflow.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#), including pulse oximeter.

ALS LEVEL 1: PARAMEDIC ONLY

1. [Albuterol \(Ventolin\)](#) 1 nebulizer treatment (if <1 year or <10 kg, mix 1.25 mg in 1.5 ml of Normal Saline {0.083%}; if >1 year or >10 kg, mix 2.5 mg in 3 ml of Normal Saline {0.083%}). May repeat twice PRN (a).
2. Add [Ipratropium Bromide \(Atrovent\)](#) If < 8 years, add 0.25 mg (1.25 ml); if > 8 years, add 0.5 mg (2.5 ml) of Atrovent to first [Albuterol](#) nebulizer treatment (on first nebulizer treatment only) and flow O₂ at 6-8 L/min.
3. Consider need for assisted ventilation and intubation
4. If respiratory distress is severe, [Epinephrine](#) (1:1000) 0.01mg/kg IM (if < 8 years, 0.15 mg up to maximum dose of 0.3mg; if > 8 years, maximum dose is 0.3 –0.5 mg).
5. If respiratory distress is severe, give [Methylprednisolone Sodium Succinate \(Solu-Medrol\)](#) 2mg/kg IV (Maximum dose 125 mg).



ALS LEVEL 2: MEDICAL CONTROL

1. Repeat Epinephrine (1:1000) 0.01 mg/kg IM (if < 8 years, 0.15 mg up to maximum dose of 0.3 mg; if > 8 years, maximum dose is 0.3 – 0.5 mg).
2. Call medical control or medical director if any concerns or questions.
3. For severe dyspnea, consider giving Magnesium Sulfate; 25 – 40 mg/kg (maximum 2gm) IV (mixed in 50 ml of D5W given over 10 – 20 minutes).



3.3 PEDIATRIC CARDIAC DYSRHYTHMIAS



3.3 PEDIATRIC CARDIAC DYSRHYTHMIAS

Overview:

Cardiac dysrhythmias in pediatric patients are uncommon and are usually due to noncardiac problems, unless the patient is known to have congenital or acquired cardiac disease. Cardiac arrest is usually the end result of hypoxemia and acidosis resulting from respiratory insufficiency or shock. Therefore, attention should be given initially to support of the respiratory system. Pediatric dysrhythmias can be divided into three categories: slow rhythms, fast rhythms, or no rhythm. The most common dysrhythmia is bradycardia, which is the result of hypoxia or acidosis. Tachycardias can be a compensatory mechanism or a result of a reentry mechanism. Ventricular fibrillation, although rare in pediatrics, is usually the result of hypoxia. Asystole is a terminal event, following prolonged, untreated bradycardia.

“On the basis of the published evidence to date, the Pediatric Advanced Life Support (PALS) Task Force of the International Liaison Committee on Resuscitation (ILCOR) has made the following recommendation (July 2003):

Automated external defibrillators (AEDs) may be used for children 1 to 8 years of age who have no signs of circulation. Ideally the device should deliver a pediatric dose. The arrhythmia detection algorithm used in the device should demonstrate high specificity for pediatric shockable rhythms, i.e., it will not recommend delivery of a shock for nonshockable rhythms (Class IIb).”¹

1. American Heart Association, National ECC Training Memo, August 15, 2003.



3.3.1 ASYSTOLE

Purpose: This protocol is for pediatric patients found to be in asystole.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol](#) 3.1.3, including pulse oximeter.
2. CPR

ALS LEVEL 1: PARAMEDIC ONLY

1. Check other leads to confirm asystole.
2. Intubate and ventilate @ 20/minute for the child and 30/minute for the infant
3. [Epinephrine](#)
*First dose: [Epi 1:10,000](#) 0.01 mg/kg IV/IO initially (maximum 1 mg).
Second and subsequent doses: [Epi 1:1000](#) 0.1 mg/kg IV/IO.
If unable to establish an IV/IO, administer [Epinephrine](#) (1:1000) 0.1 mg/kg ET (maximum ET is 15 mg). Repeat every 3-5 minutes for duration of pulselessness.*
4. Perform glucose test with finger stick. If glucose is below 60 mg/dL, administer: If neonate to infant: 5ml/kg of [D10](#) IV/IO.
If child <8 years: [D25](#) 2 ml/kg IV/IO;
If >8 years: [D50](#) 1 ml/kg IV/IO (a).
5. For known acidosis or prolonged down time, consider [Sodium Bicarbonate](#) (8.4% solution) 1 mEq/kg IV/IO (1ml/kg). For infants dilute 8.4% 1:1 with sterile water (not normal saline) to make 4.2% and give 1mEq/kg IV/IO (NOTE: 1mEq = ~ 84 mg Bicarbonate). This reduces the hyperosmolarity of the solution.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.

Note

(a) To avoid infiltration and resultant tissue necrosis, Dextrose 25% and 50% should be given slow IV with intermittent aspiration of IV line to confirm IV patency followed by saline flush.



3.3.2 BRADYCARDIA

Purpose: Use this protocol for pediatric patients with bradycardia. Causes of symptomatic bradycardia include hypoxemia, hypothermia, head injury, heart block, heart transplant (special situation), and toxin/poison/drug overdose.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#), including pulse oximeter.
2. Assure adequate ventilation and oxygenation.
3. If heart rate is <60/min. in infant or child associated with poor systemic perfusion, start chest compressions

ALS LEVEL 1: PARAMEDIC ONLY

1. [Epinephrine](#) (1:10,000) 0.01 mg/kg IV/IO (maximum 1 mg) q 3-5 min. If unable to establish IV/IO, administer [Epinephrine](#) (1:1,000) 0.1 mg/kg ET (maximum ET is 10 mg). Repeat every 3-5 minutes at same dose (a).
2. [Atropine](#) 0.02 mg/kg IV/IO (Minimum single dose 0.1 mg)
Maximum **single** dose: (child 0.5 mg) (adolescent 1mg)
Maximum **total** dose: (child 1 mg) (adolescent 2 mg)
If unable to establish IV/IO, administer [Atropine](#) 0.04 mg/kg ET (same minimum dose as IV/IO). May repeat Atropine once (a).
3. Identify and treat possible causes.
4. [External pacemaker](#) (see Medical Procedure).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.

Notes

(a) Administer Atropine before Epinephrine for bradycardia due to suspected increased vagal tone or primary AV block.



3.3.3 NARROW COMPLEX TACHYCARDIA

Purpose: Pediatric patients suffering from tachycardia may or may not exhibit symptoms. Narrow complex tachycardia (QRS < 0.08 seconds) is either sinus tachycardia or supraventricular tachycardia. The following rates should be considered:

Sinus tachycardia is greater than normal (see Appendix; [Pediatric Vital Signs](#) 7.10) and usually for a child: <180/minute and infant: <220/minute. Rate may vary with sinus tachycardia.

Supraventricular tachycardia is usually >220/minute for infants. If >2 years of age, SVT may be slower (e.g. 180-220/minute). Rate will not vary with SVT.

Wide complex SVTs are rare in children and, therefore, should initially be considered as ventricular in origin, unless proven otherwise (e.g. documented QRS morphology consistent with pre-existing BBB or WPW).

Possible causes of pediatric tachycardia include:

4 H's	4 T's
Hypoxemia	Tamponade
Hypovolemia	Tension pneumothorax
Hyperthermia	Toxins
Hyper/hypokalemia and metabolic disorders	Thromboembolism

3.3.3a UNSTABLE SINUS TACHYCARDIA (DIMINISHED PERFUSION)

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol](#) 3.1.3.

ALS LEVEL 1: PARAMEDIC ONLY

1. Fluid challenge Normal Saline 20 ml/kg IV.
2. Consider other cause (e.g. 4 H's, 4 T's).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.



3.3.3b STABLE SVT (Normal perfusion)

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3.](#)

ALS LEVEL 1: PARAMEDIC ONLY

1. Perform [12 lead ECG](#) (see Medical Procedure 4.38).
2. Consider cause (e.g. 4 H's, 4 T's).

ALS LEVEL 2: MEDICAL CONTROL

1. Vagal maneuvers; begin with ice water (see Medical Procedure [Vagal maneuvers 4.39](#)).
2. [Adenosine Triphosphate \(Adenocard\)](#) 0.1 mg/kg (6 mg max.) rapid IVP followed by 6 ml NS flush.
3. Repeat in 2 minutes, [Adenosine Triphosphate \(Adenocard\)](#) 0.2 mg/kg (12 mg max.) rapid IVP followed by 6 ml NS flush.
4. Repeat in 2 minutes, [Adenosine Triphosphate \(Adenocard\)](#) 0.2 mg/kg (12 mg max.) rapid IVP followed by 6 ml NS flush.

3.3.3c UNSTABLE SVT (Diminished perfusion)

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3.](#)

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider cause (eg. 4 H's, 4 T's).
2. Consider sinus tachycardia as the underlying, not SVT.
3. If patient is responsive, [Adenosine Triphosphate \(Adenocard\)](#) 0.1 mg/kg (6 mg max.) rapid IVP or IOP followed by 6 ml NS flush.
4. If patient is responsive, repeat in 2 minutes, [Adenosine Triphosphate \(Adenocard\)](#) 0.2 mg/kg (12 mg max.) rapid IVP followed by 6 ml NS flush.
5. If patient is responsive, repeat in 2 minutes, [Adenosine Triphosphate \(Adenocard\)](#) 0.2 mg/kg (12 mg max.) rapid IVP followed by 6 ml NS flush.



ALS LEVEL 2: MEDICAL CONTROL

1. If patient is conscious and aware of situation, consider sedation with one of the following benzodiazepines:
 - a. **Lorazepam (Ativan)** 0.05 to 0.1 mg/kg IV, maximum; 1 mg.
 - b. **Diazepam (Valium)** 0.1 mg/kg IV/IO.
 - c. **Midazolam (Versed)**
For procedural sedation; IV/IO route;
6 mo – 5 yr; 0.05 – 0.1 mg/kg IV/IO x 1 repeat q 2 – 3 min prn;
max 0.6 mg/kg total
6 – 12 yr; 0.025 – 0.05 mg/kg IV/IO x 1, repeat q 2 – 2 min prn;
max 0.4 mg/kg total
> 12 yr old: 0.5 – 2 mg IV/IO x 1; may repeat q 2 -3 min prn;
max 10 mg

*For procedure sedation: **IM route;***
> 6 mo; 0.1 - 0.15 mg/kg IM; max 0.5 mg/kg (use ideal body wt
in obese pt)
2. If patient is poorly responsive, synchronized cardioversion
 - a. @ 0.5 joule/kg. (or equivalent biphasic energy level) if no response :
 - b. synchronized cardioversion @ 1 joule/kg (or equivalent biphasic energy level). If no response:
 - c. synchronized cardioversion @ 2 joules/kg (or equivalent biphasic energy level).
3. **Amiodarone** 5 mg/kg IV/IO over 20 minutes.



3.3.4 PULSELESS ELECTRICAL ACTIVITY (PEA)

Purpose: This protocol is used for: electromechanical dissociation (EMD), pseudo-EMD, idioventricular rhythms, bradysystolic rhythms, post-defibrillation idioventricular rhythms.

Possible causes of pediatric PEA include:

4 H's	4 T's
Hypoxemia	Tamponade
Hypovolemia	Tension pneumothorax
Hypothermia	Toxin/poisons/drugs
Hyper/hypokalemia	Thromboembolism
And metabolic disorders	

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. CPR.

ALS LEVEL 1: PARAMEDIC ONLY

1. Intubate and ventilate (see [Medical Procedure Oraltracheal Intubation4.27](#)).
2. [Epinephrine](#)
First dose: [Epi 1:10,000](#) 0.01 mg/kg IV/IO initially (maximum 1 mg).
Second and subsequent doses: [Epi 1:1000](#) 0.1 mg/kg IV/IO. If unable to establish IV/IO, administer [Epi \(1:1000\)](#) 0.1 mg/kg ET (maximum ET is 15 mg). Repeat every 3-5 minutes for duration of pulselessness.
3. Consider cause (e.g. 4 H's, 4 T's) and possible treatment options (e.g. glucose) (see specific protocols).
4. Check blood glucose: Below 60 mg/dL, administer:
 - a. Neonates: [10% Dextrose](#): 2-5 ml/kg (0.2-0.5 g/kg)
 - b. Infants: [10% Dextrose](#): 5 ml/kg (0.5 g/kg)
 - c. Children < 8 yrs: [D25](#) 2 ml/kg IV/IO (0.5 g/kg)
 - d. Children > 8 yrs: [D50](#) 1 ml/kg IV/IO.
5. Fluid challenge of Normal Saline 20 ml/kg IV/IO.
6. Consider [Sodium Bicarbonate](#) (8.4%) 1 mEq/kg IV/IO (a).



ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director if any concerns or questions.

Note

(a) Sodium Bicarbonate (4.2%) 1 mEq/kg IV/IO should be administered to infants (dilute 8.4% 1:1 with Normal Saline to make 4.2%).



3.3.5 WIDE COMPLEX TACHYCARDIA WITH A PULSE (VENTRICULAR TACHYCARDIA)

STABLE (normal perfusion)

Purpose: This protocol is used in wide complex tachycardia (QRS > 0.08 seconds) with a rate > 150/minute.

Possible causes of pediatric tachycardia include:

4 H's	4 T's
Hypoxemia	Tamponade
Hypovolemia	Tension pneumothorax
Hypothermia	Toxin/poisons/drugs
Hyper/hypokalemia	Thromboembolism
And metabolic disorders	

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider cause (e.g. 4 H's, 4 T's).
2. Administer one of the following antiarrhythmics:
 - a. [Amiodarone](#) 5 mg/kg IV/IO over 20 minutes.
 - b. [Lidocaine](#) 1% 1 mg/kg IV/IO. Repeat every 5 minutes to a maximum total dose of 3 mg/kg (a)(c). Use if Amiodarone is unavailable.
 - c. [Procainamide](#) 15 mg/kg IV/IO over 30 minutes.

ALS LEVEL 2: MEDICAL CONTROL

1. Use only one antiarrhythmic medication. If rhythm does not convert with maximum dose, treat as unstable (synchronized cardiovert).
2. Call medical control or medical director if any concerns or questions.



Notes

- (a) Dilute Lidocaine 2% 1:1 with Normal Saline to make 1%.
- (b) If unable to establish IV/IO, administer Lidocaine 3 mg/kg ET. May repeat every 5 minutes up to 6 mg/kg ET.
- (c) If Lidocaine suppresses ectopy, start [Lidocaine maintenance infusion](#): Mix 120 mg in 100 ml of D5W (or 60 mg in 50 ml of D5W) and flow at 20-50 mcg/kg/min.
- (d) If patient converts rhythm, give [Lidocaine](#) 1% 1 mg/kg IV/IO, refer to (a)(b)(c).

3.3.5 WIDE COMPLEX TACHYCARDIA WITH A PULSE (VENTRICULAR TACHYCARDIA)

UNSTABLE (diminished perfusion)

Purpose: This protocol is used in wide complex tachycardia (QRS > 0.08 seconds) with a rate > 150/minute.

Possible causes of pediatric tachycardia include:

<u>4 H's</u>	<u>4 T's</u>
Hypoxemia	Tamponade
Hypovolemia	Tension pneumothorax
Hypothermia	Toxin/poisons/drugs
Hyper/hypokalemia	Thromboembolism
And metabolic disorders	

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. Medical Supportive Care Protocol 3.1.3.

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider cause (e.g. 4 H's, 4 T's).



ALS LEVEL 2: MEDICAL CONTROL

1. If patient is conscious and aware of situation, consider sedation with one of the following benzodiazepines:
 - a. **Lorazepam (Ativan)** 0.05 to 0.1 mg/kg IV, maximum; 1 mg.
 - b. **Diazepam (Valium)** 0.1 mg/kg IV/IO.
 - c. **Midazolam (Versed)**
IV/IO Route:
6 mo – 5 yr; 0.05 – 0.1 mg/kg IV/IO x 1 max 0.6 mg/kg total
6 – 12 yr; 0.025 – 0.05 mg/kg IV//IO x 1, max 0.4 mg/kg total
> 12 yr old: 0.5 – 2 mg IV/IO x 1; max 10 mg
IM Route:
> 6 mo; 0.1 - 0.15 mg/kg IM; max 0.5 mg/kg (use ideal body wt in obese pt)
2. Synchronized cardioversion @ 0.5 joule/kg (or equivalent biphasic energy) (d).
3. Synchronized cardioversion @ 1 joules/kg (or equivalent biphasic energy) (d).



4. Administer one of the following antiarrhythmics:
 - a. **Amiodarone** 5 mg/kg IV/IO over 20 minutes.
 - b. **Lidocaine** 1% 1 mg/kg IV/IO. Repeat every 5 minutes to a maximum total dose of 3 mg/kg (a)(b)(c).
 - c. **Procainamide** 15 mg/kg IV/IO over 30 minutes.
5. Synchronized cardioversion @ 2 joules/kg (or equivalent biphasic energy) (c).
6. Synchronized cardioversion @ 4 joules/kg (or equivalent biphasic energy).

Notes

- (a) Dilute Lidocaine 2% 1:1 with Normal Saline to make 1%.
- (b) If unable to establish IV/IO, administer Lidocaine 3 mg/kg ET. May repeat every 5 minutes up to 6 mg/kg ET.
- (c) If Lidocaine suppresses ectopy, start **Lidocaine maintenance infusion:** Mix 120 mg in 100 ml of D5W (or 60 mg in 50 ml of D5W) and flow at 20-50 mcg/kg/min.
- (d) If patient converts rhythm, give **Lidocaine** 1% 1 mg/kg IV/IO, refer to (a)(b)(c).



3.3.6 WIDE COMPLEX TACHYCARDIA WITHOUT A PULSE AND VENTRICULAR FIBRILLATION

Purpose: This protocol is for pediatric patients in V-Fib and V-tach without a pulse.

Consider and Treat Possible Causes

6 Hs	6 Ts
Hypoxia	Tablets
Hypovolemia	Tamponade
Hypothermia	Tension pneumothorax
Hypoglycemia	Toxins – poisons, drugs
Hypo/hyperkalemia	Thrombosis – coronary (AMI) – pulmonary (PE)
Hydrogen ion (acidosis)	Trauma

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3.](#)
2. CPR

ALS LEVEL 1: PARAMEDIC ONLY

Defibrillate @ 2 joules/kg x1, followed by 5 cycles (or two minutes) of CPR then check rhythm. If arrhythmia still persists, resume CPR while charging defibrillator.

Check blood glucose: Below 60 mg/dL, administer:

- a. Neonates: [10% Dextrose](#): 2-5 ml/kg (0.2-0.5 g/kg)
- b. Infants: [10% Dextrose](#): 5 ml/kg (0.5 g/kg)
- c. Children < 8 yrs: [D25](#) 2 ml/kg IV/IO (0.5 g/kg)
- d. Children > 8 yrs: [D50](#) 1 ml/kg IV/IO.

Defibrillate @ 4 joules/kg x1, followed by 5 cycles (or two minutes) of CPR then check rhythm. If arrhythmia still persists, resume CPR while charging defibrillator.

Epinephrine

First dose: [Epi 1:10,000](#) 0.01 mg/kg IV/IO initially.

Second and subsequent doses: [Epi 1:1000](#) 0.1 mg/kg IV/IO.

If unable to establish IV/IO, administer [Epinephrine \(1:1000\)](#) 0.1 mg/kg ET, followed by 5 cycles (or two minutes) of CPR if no conversion. Repeat every 3-5 minutes for duration of pulselessness. (a)

Defibrillate @ 4 joules/kg x1, followed by 5 cycles (or two minutes) of CPR then check rhythm. If arrhythmia still persists, resume CPR while charging defibrillator.

Administer one of the following antiarrhythmics:

- a. [Amiodarone](#) 5mg/kg IV/IO (a)

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- b. Lidocaine 1 mg/kg IV/IO (if Amiodarone is unavailable), followed by 5 cycles of CPR if no conversion. Repeat Lidocaine 1 mg/kg IV/IO every 3-5 minutes (max. 3 mg/kg). (a)(b)(c)(d)
- c. If Torsades de Pointes, Magnesium Sulfate 25 – 40 mg/kg (maximum 2gm) IV/IO (mixed in 50 ml of D5W given over 10 – 20 minutes). (a)

Consider and treat possible causes: 6H's and 6T's.

Repeat steps 3 thru 7 for duration of pulselessness.

For prolonged event, give Sodium Bicarb 1 mEq/kg initially IV/IO (1ml/kg of 8.4% solution) followed by 0.5 mEq/kg every 10 minutes. In neonates and infants, dilute the 8.4% solution 1:1 with sterile water (not saline) making a 4.2% solution to reduce the hyperosmolarity of the solution. (a)(e)

ALS Level 2: MEDICAL CONTROL

1. Consider termination of resuscitation attempt.
2. Call medical control or medical director if any concerns or questions.

Notes:

(a) Defibrillate @ 4 joules/kg after every drug is circulated for 30 seconds.

(b) Dilute Lidocaine 2% 1:1 with Normal Saline to make 1%.

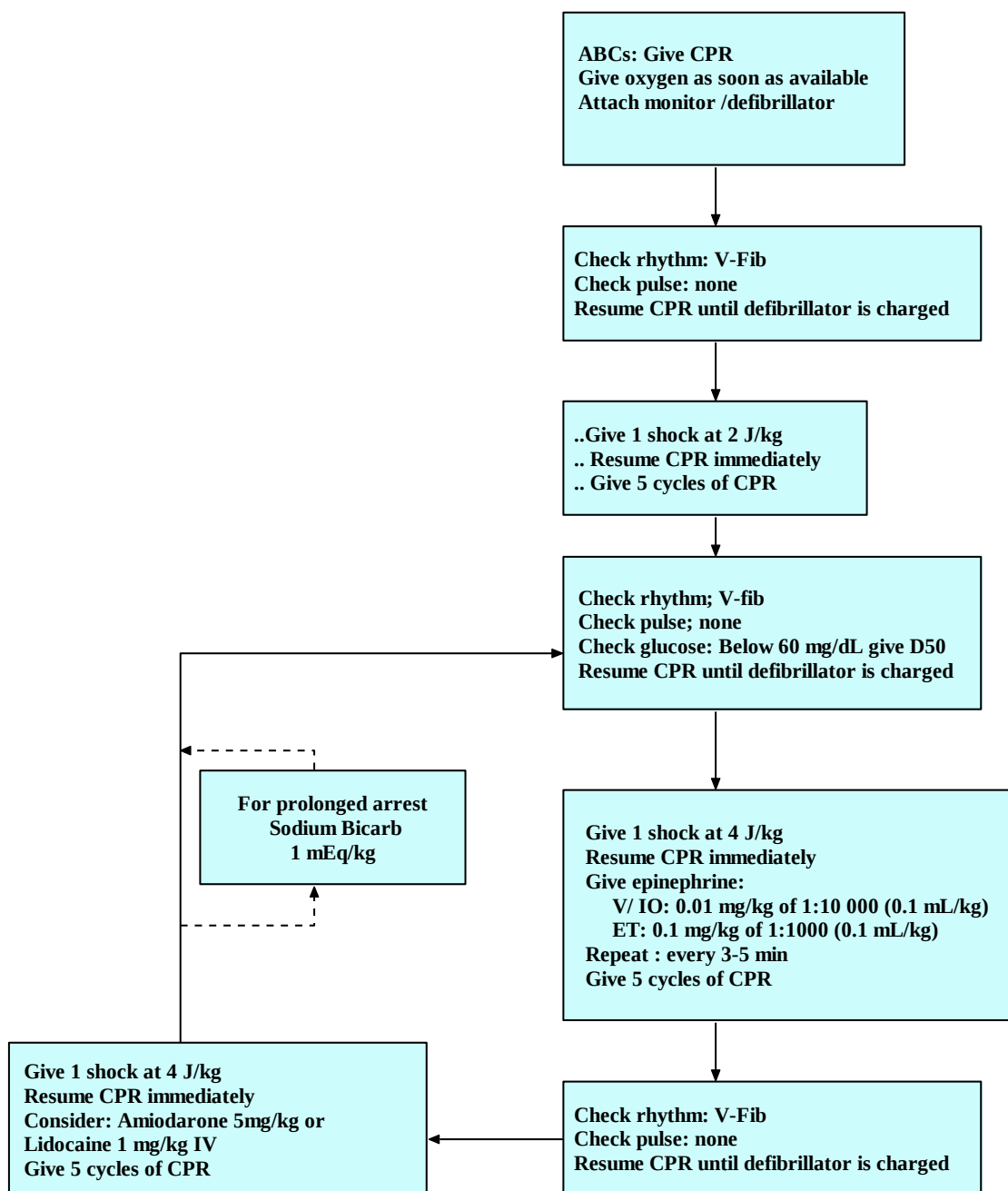
(c) If unable to establish IV/IO, administer Lidocaine 3 mg/kg ET. May repeat every 5 minutes up to 9 mg/kg.

(d) If Lidocaine converts rhythm, start Lidocaine maintenance infusion @ 20-50 mcg/kg/min.

(e) Sodium Bicarbonate (4.2%) 1 mEq/kg IV/IO should be administered to infants (dilute 8.4% 1:1 with Normal Saline to make 4.2%).



Pediatric Ventricular Fibrillation/Pulseless V-Tach





3.4

NEWBORN / INFANT

CARDIOPULMONARY ARREST



3.4 NEWBORN / INFANT CARDIOPULMONARY ARREST

Overview:

Infant and newborn cardiopulmonary arrest is usually a result of prolonged poor oxygenation and/or severe circulatory collapse. Newborns should be resuscitated using Pediatric Protocol 3.4.1. Unless there are obvious signs of death (see Administrative Protocol; DNR / RESUSCITATION CONSIDERATIONS / DOA) the infant in cardiopulmonary arrest should be resuscitated using the protocols in Pediatric Protocol 3.3. Some infants may not appear to be salvageable, where the Paramedic determines a resuscitation attempt is warranted for psychological reasons (e.g. parent's peace of mind). Consideration should also be given to SIDS (see Pediatric Protocol 3.4.2).



3.4.1 NEWBORN RESUSCITATION

Purpose: This protocol is to be used for newborns (immediately following delivery) that are in need of resuscitation (all other neonates should be treated as infants, with the exception of Atropine).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. Dry and keep baby warm (cover with thermal blanket or dry towel and cover scalp with stocking cap).
2. Position patient to open airway (a).
3. Clear airway - suction mouth and nose with bulb syringe PRN.
Paramedic Only: If newborn has signs of thick meconium, after suctioning with bulb syringe, intubate and suction trachea (see below)(b).
4. Stimulate baby (rub baby's back).
5. Clamp and cut cord, if not already done. Apply 2 umbilical clamps, 2 inches apart and at least 8 inches from the navel and cut between clamps.
6. Assess skin color, respirations, and heart rate.
7. Ventilate @ 40-60 breaths/minute with 100% oxygen under the following conditions:
 - a. Apnea.
 - b. Heart rate <100 beats/minute.
 - c. Persistent central cyanosis after high-flow oxygen.
8. Perform chest compressions at 120/minute (3:1 ratio, one third of the anterior-posterior diameter of chest in depth), using two thumbs side by side (or superimposed one on top of the other) over the mid-sternum just below the nipple line with the fingers encircling the chest and supporting the back, under the following conditions:
 - a. Heart rate <60 beats/minute and not rapidly increasing despite adequate ventilation with 100% oxygen for approximately 30 seconds.

ALS LEVEL 1: PARAMEDIC ONLY

1. Intubate under the following conditions:
 - a. Bag-valve-mask ventilation is ineffective (>2 minutes).
 - b. Tracheal suctioning is required, especially for thick meconium (b).
 - c. Prolonged positive pressure ventilation is needed.



2. **Epinephrine** (1:10,000) 0.01-0.03 mg/kg IV/IO/ET under the following conditions:
 - a. Asystole.
 - b. Heart rate <60 beats/minute despite adequate ventilation with 100% oxygen and chest compressions.
 - c. Repeat every 3-5 minutes, PRN.
3. Fluid challenge Normal Saline 10 ml/kg IV under the following conditions:
 - a. Pallor that persists after adequate oxygenation.
 - b. Faint pulses with a good heart rate.
 - c. Poor response to resuscitation with adequate ventilations.
4. Check blood glucose level on all resuscitations that do not respond to initial therapy. Use heel stick.
 - a. If blood glucose is <40 mg/dL, administer **D10** 2 -5 ml/kg IV/IO (dilute D50 1:4 with Sterile Water or Normal Saline = D10).
5. Perform Pediatric Assessment Triangle - Rapid Cardiopulmonary Assessment (see **Pediatric 3.1.1 - Initial Assessment**) frequently.

ALS LEVEL 2: MEDICAL CONTROL

1. If neonate continues to have altered mental status with depressed respirations, consider **Narcan** 0.1 mg/kg (1 mg/ml concentration) IV/IO/IM/ET (c).

Notes

- (a) The neonate should be placed on his or her back or side with the neck in a neutral position. To help maintain correct position, a rolled blanket or towel may be placed under the back and shoulders of the supine neonate, to elevate the torso 3/4 or 1 inch off the mattress to extend the neck slightly. If copious secretions are present, the neonate should be placed on his or her side with the neck slightly extended to allow secretions to collect in the mouth rather than in the posterior pharynx.
- (b) Tracheal suctioning for thick meconium should be done via the endotracheal tube using a meconium aspirator attached to the 15 mm adaptor of the ETT. The suction unit is then attached and placed on low (no more than 100 mm Hg). Suctioning should be performed until the ETT is clear (maximum 5 seconds). It may be necessary to repeat the intubation and continue suctioning until clear (maximum 3 times).
- (c) Avoid the use of Narcan if the mother has a history of drug use/abuse, as Narcan may precipitate seizures in the newborn due to acute withdrawal.



3.4.2 SUDDEN INFANT DEATH SYNDROME (SIDS)

Purpose: Sudden Infant Death Syndrome, or "crib death," is the sudden and unexpected death of an apparently healthy infant, usually under one year of age, which remains unexplained after a complete medical history, death scene investigation and postmortem examination. SIDS almost always occurs when the infant is asleep or thought to be asleep. See [Appendix Sudden Infant Death Syndrome](#)

The majority of SIDS deaths (90%) occur in infants less than six months of age. SIDS is more common in males (60%) than females (40%). SIDS almost always occurs when the infant is asleep or thought to be asleep. SIDS is more prevalent in winter months and in infants with low birth weights. SIDS occurs in all socio-economic, racial and ethnic groups. Occasionally, a mild upper respiratory infection may be present prior to death.

Physical examination of a SIDS infant may reveal lividity or settling of blood, which produces mottled, blue or gray skin. The lividity may give the appearance of "bruising." There may also be froth, blood tinged mucus draining from the infant's mouth and nostrils. In addition, cooling and rigor mortis may be present. The SIDS infant usually appears well developed and does not exhibit any signs of external injury.

SIDS should not be confused with child abuse (see [Appendix - Signs of Child Abuse](#) 7.13). Initially it is difficult to distinguish a SIDS death from other causes of death in infants. SIDS is the leading cause of death between one week and one year of age in the United States.

Although there may be obvious signs of death, the Paramedic may attempt resuscitation of the infant for psychological reasons (e.g. parents peace of mind). There may also be some infants in which the Paramedic determines that a resuscitation attempt is not warranted (see [Administrative Protocol - DNR/DOA 1.2.5](#)). In either event, the Paramedic should be prepared for a myriad of grief reactions from the parents and/or caregiver.

It should also be noted, that some SIDS deaths are mistaken for child abuse. If there are possible signs of abuse (see [Appendix - Signs of Child Abuse](#) 7.13), the Paramedic should continue as if it were a SIDS death, to avoid any unnecessary grief on the part of the parents and/or caregiver. The Paramedic should not attempt to determine whether or not child abuse has taken place. The scene should be treated as any other death scene, with attention to preservation of potential evidence. Remember, it is more common for an unexpected death of an infant to be SIDS.

Procedure:

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BASIC LEVEL: EMT and PARAMEDIC

1. In most instances, resuscitation should be attempted (see appropriate Pediatric Protocols).
2. Assign a crewmember to assist the parents and/or caregiver and to explain the procedures.
3. If time permits, elicit a brief history and perform an environmental check. Document all findings on the EMS run report.
4. Once resuscitation is started, do not stop until directed to do so in the hospital by a physician.

ALS LEVEL 1: PARAMEDIC ONLY

1. As per appropriate protocol

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



3.5 PEDIATRIC NEUROLOGIC EMERGENCIES



3.5 PEDIATRIC NEUROLOGIC EMERGENCIES

Overview:

This section covers the most common pediatric neurologic emergencies, altered mental status and seizures. It is important for the paramedic to understand appropriate behavior for the child/infant's age in order to properly assess level of consciousness (see [Appendix - Glasgow Coma Score for pediatric patients](#)). Attention should be given to how the child interacts with parents and the environment and whether or not the patient can make good eye contact. Parents may be invaluable for a baseline comparison of level of consciousness. The parents may simply state that the patient is not acting right. Causes of pediatric altered mental status include: hypoxia, head trauma, intoxication, infection, and hypoglycemia.

Approximately 4-6% of all children will have at least one seizure. Seizures may be due to an underlying disease (e.g. epilepsy) or may simply be a result of fever. Other causes of pediatric seizures include: hypoxia, brain hemorrhage, infection of brain and spinal cord (e.g. meningitis), hypoglycemia, and intoxication.



3.5.1 ALTERED LEVEL OF CONSCIOUSNESS (ALTERED MENTAL STATUS)

Purpose: Use this protocol for pediatric patients with altered mental status. Common signs of altered mental status in pediatric patients include: combative behavior, decreased responsiveness, lethargy, weak cry, moaning, hypotonia, ataxia, and changes in personality. Initial approach should be based on the assumption that the patient is suffering from hypoxia, ischemia, hypoglycemia or dehydration. Secondary considerations should include medications, illicit drugs, plants, trauma, etc.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#), consider need for spinal immobilization.
2. Consider need for ventilatory assistance.
3. Assess for and document the [Glasgow Coma Scale](#)

ALS LEVEL 1: PARAMEDIC ONLY

1. If child remains unresponsive and prolonged ventilatory assistance is needed, consider need for intubation (a).
2. Perform glucose test with finger stick. If glucose is below 60 mg/dL (< 40mg/dl for newborns), administer:
 - a. Neonates: [10% Dextrose](#): 2-5 ml/kg (0.2-0.5 g/kg)
 - b. Infants: [10% Dextrose](#): 5 ml/kg (0.5 g/kg)
 - c. Children < 8 yrs: [25% Dextrose](#): 2 ml/kg (0.5 g/kg) slow IV (b)
 - d. Children > 8 yrs: [50% Dextrose](#): 1 ml/kg IV/IO (b)
3. If mental status is depressed and signs of dehydration exist, administer fluid challenge of Normal Saline @ 20 ml/kg IV.
4. If mental status and respiratory effort is depressed, administer [Narcan](#) 0.1 mg/kg (maximum 2 mg) IV/IO/IM. May repeat every 5 minutes PRN.
5. If toxicology (poisoning) is suspected, **Contact Poison Information Center (1-800-222-1222)**



ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Notes:

- (a) Use appropriate discretion regarding immediate intubation of pediatric patients who may quickly regain consciousness, such as hypoglycemics after D25 or opiate overdose cases after Narcan.
- (b) To avoid infiltration and resultant tissue necrosis, Dextrose 25% should be given slow IV with intermittent aspiration of IV/IO line to confirm IV/IO patency followed by saline flush.



3.5.2 SEIZURE DISORDERS

Purpose: This protocol should be used when the patient has witnessed continuous convulsions or repeating episodes without regaining consciousness or sufficient respiratory compensation. Consider underlying etiology, such as: fever, hypoxia, head trauma, infection of brain and spinal cord (e.g. meningitis), hypoglycemia, and intoxication.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#). Apply gentle support of the patient's head to avoid trauma and loosen tight fitting clothing.
2. Assess for and document the [Glasgow Coma Scale](#).

ALS LEVEL 1: PARAMEDIC ONLY

1. Perform glucose test with finger stick. If glucose is below 60 mg/dL, administer:
 - a. If Neonate or Infant: **D10** 5ml/kg IV/IO
 - b. If <8 years: **D25** 2 ml/kg IV/IO;
 - c. If >8 years: **D50** 1 ml/kg IV/IO (a)(b).
2. If seizure continues, administer one of the following benzodiazepines:
 - a. **Lorazepam (Ativan)** 0.05 to 0.1 mg/kg IV, maximum; 1 mg.
 - b. **Diazepam (Valium)**
 IV/IO: [1 mo – 5 yr] 0.1 - 0.3 mg/kg IV/IO q 5-10 min. Max 5 mg total.
 [5 yr – 12 yr] 0.1- 0.3 mg/kg IV/IO q 5-10 min. Max 10 mg total.
 [> 12 yr] 5 – 10 mg IV/IO q 10 – 15 min. Max 30 mg total.
 Rectal: Verify dose with Broselow tape
 [up to 5 yrs] 0.5 mg/kg PR x 1
 [6 – 11 yrs] 0.3 mg/kg PR x1
 [> 11 yrs] 0.2 mg/kg PR x 1
 (Maximum 20 mg) rectally (d) (e)
 - c. **Midazolam (Versed)** 2 mo – 12 yrs;
 IV/IO: start 0.15 mg/kg x1(Max 4 mg),
 IM: 0.2mg/kg. Maximum 10 mg
 IN (intranasal): 0.2 mg/kg. Maximum 10 mg (c)



ALS LEVEL 2: MEDICAL CONTROL

1. If seizure continues for 5 minutes, administer one of the following benzodiazepines:
 - a. **Lorazepam (Ativan)** 0.05 to 0.1 mg/kg IV, maximum; 1 mg.
 - b. **Diazepam (Valium)**,
IV/IO: 0.2 mg/kg IV/IO
Rectal: 0.5 mg/kg (maximum 20 mg) rectally.(d)(e)
 - c. **Midazolam (Versed)** 0.1 mg/kg (maximum 4 mg) IV or 0.2 mg/kg intranasal (maximum 10mg) (c)
2. Call medical control or medical director for any questions or concerns.

Notes:

- (a) For newborns and infants, perform heel stick. In newborns, if blood glucose is <40 mg/dL, administer D10 5 ml/kg IV/IO (dilute D50 1:4 with Normal Saline = D10).
- (b) To avoid infiltration and resultant tissue necrosis, Dextrose 10%, 25%, and 50% should be given slow IV with intermittent aspiration of IV/IO line to confirm IV/IO patency followed by saline flush.
- (c) Intranasal administration of benzodiazepines requires the use of a mucosal atomization device (same as IV dose).
- (d) Use a lubricated tuberculin or 3-5 ml syringe **without the needle**. Position patient in a decubitus knee position or supine with legs held apart and insert lubricated syringe approximately 5 cm into the rectum. Inject Valium, remove syringe and tape buttocks closed.
- (e) If Diastat (rectal diazepam preparation) is used, administer 2.5 mg.



3.6 PEDIATRIC TOXICOLOGIC EMERGENCIES



3.6 PEDIATRIC TOXICOLOGIC EMERGENCIES

Overview:

This protocol is to be used for those patients suspected of exposure to toxic substances via any route of exposure (e.g. drug overdose, snake bite, etc.). The protocols will give specific considerations for each type of exposure, as well as general treatment guidelines. Additional assistance may be necessary in certain cases (e.g. hazardous materials team for toxic exposure, police for scene control, including violent and/or impaired patient - see [Pediatric Protocol 3.7.5](#)).

A history of the events leading to the illness or injury should be obtained from the patient and bystanders to include:

1. What drugs, poisons, or other substances was the patient exposed to?
Consider multiple substances, especially on overdoses. Also consider plants and herbal remedies.
2. When and how much?
3. Duration of symptoms?
4. Is patient depressed, suicidal? History of previous overdose? (if applicable).
5. Accidental? Nature of accident?
6. Duration of exposure (if applicable).

Collect all pill bottles, empty or full, and check for "suicide notes" (if applicable).

Transport any/all information or items that may assist in the treatment of the patient to the emergency department.

Contact the Poison Information Center (1-800-222-1222) for consultation regarding specific therapy and then contact on-line medical control for confirmation of Level 2 orders.



3.6.1 PEDIATRIC INGESTION (OVERDOSE)

Purpose: This protocol should be used on most types of ingestion (e.g. acetaminophen, benzodiazepines, narcotics, tricyclic antidepressants, vitamins with iron, etc.). Symptoms vary with the substance involved (also see [Pediatric Protocol 3.6.4 - Organophosphate Poisoning](#)).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#).
2. Consider need for ventilatory support
3. Assess for and document the [Glasgow Coma Scale](#)

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider need for intubation
2. Perform glucose test with finger stick. If glucose is below 60 mg/dL (< 40 mg/dl newborn), administer:
 - a. Neonates: [10% Dextrose](#): 2-5 ml/kg (0.2-0.5 g/kg) (a)(b)
 - b. Infants: [10% Dextrose](#): 5 ml/kg (0.5 g/kg) (a)(b)
 - c. Children < 8 yrs: [25% Dextrose](#): 2 ml/kg (0.5 g/kg) slow IV
 - d. Children > 8 yrs: [50% Dextrose](#): 1 ml/kg IV/IO
3. If hypoglycemic and unable to start IV/IO, and patient is:
 - a. < 20 kg give [Glucagon](#) 0.5 mg Sub-Q/IM
 - b. > 20 kg give [Glucagon](#) 1 mg SUB-Q/IM.
4. If any questions, contact **Poison Information Center (1-800-282-3171)**.
5. If suspected narcotic overdose in non-neonate, administer [Narcan](#) 0.1 mg/kg (maximum 2 mg) IV/IO/IM/Intranasal. May repeat every 5 minutes PRN. (c)
6. If suspected tricyclic antidepressant overdose (QRS > 0.10), administer [Sodium Bicarbonate](#) 1 mEq/kg IV/IO (d).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Notes:

- (a) For newborns and infants, perform heel stick. In newborn, if blood glucose is <40 mg/dL, administer D10 5 ml/kg IV/IO (dilute D50 1:4 with Normal Saline = D10).
- (b) To avoid infiltration and resultant tissue necrosis, Dextrose 10%, 25%, and 50% should be given slow IV with intermittent aspiration of IV/IO line to confirm IV/IO patency followed by saline flush.



- (c) Intranasal administration of Naloxone requires the use of a mucosal atomization device (same as IV dose).
- (d) If patient is seizing, also see [Pediatric Protocol Seizures 3.5.2](#)).



3.6.2 BITES AND STINGS

Purpose: This protocol includes the treatment for snake and spider bites, dog and cat bites, insect stings, marine animal envenomations and stings. **All bites should be transported to the hospital.** For questions or concerns, contact Poison Information Center (1-800-222-1222).

Procedure:

Snake Bites

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3.](#)
2. Consider need for [Pediatric Protocol 3.7.1 – Allergic Reactions/Anaphylaxis.](#)
4. Splint affected area, place patient supine with extremities at a neutral level, keep patient quiet, remove and secure all jewelry.
5. Wash area of bite with copious amounts of water.
6. Attempt to identify snake, if safe to do so.
7. Check temperature and pulse distal to bite on extremity and mark level of swelling and time with pen every 15 minutes.

ALS LEVEL 1: PARAMEDIC ONLY

1. Refer to [Pediatric Pain Protocol 3.1.5](#) for pain management.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Dog and Cat and Wild Animal Bites

BASIC LEVEL:

1. [Medical Supportive Care Protocol 3.1.3](#)
2. [Trauma Supportive Care Protocol 3.1.4](#) if indicated
3. Wound care - BLS (do not use hydrogen peroxide on deep puncture wounds or wounds exposing fat).
4. Advise dispatch to contact animal control and PD for identification and quarantine of animal.

ALS LEVEL 1: PARAMEDIC ONLY

1. Refer to [Pediatric Pain Protocol 3.1.5](#) for pain management.



ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Insect Stings (including: Centipedes, Scorpions and Spiders)

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. [Trauma Supportive Care Protocol 3.1.4](#), if indicated
3. Consider need for [Pediatric Protocol 3.7.1 - Allergic Reactions/Anaphylaxis](#).
4. Remove stinger by scraping skin with edge of flat surface (e.g. credit card). Do not attempt to pull stinger out, as this may release more venom.
5. Clean area with soap and water.

ALS LEVEL 1: PARAMEDIC ONLY

1. Refer to [Pediatric Pain Protocol 3.1.5](#) for pain management.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Marine Animal Envenomations -Stingray, Scorpionfish (Lionfish, Zebrafish, Stonefish), Catfish, Weeverfish, Starfish, and Sea Urchin

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. [Trauma Supportive Care Protocol 3.1.4](#), if indicated
3. Consider need for [Pediatric Protocol 3.7.1 - Allergic Reactions/Anaphylaxis](#).
4. Immerse the punctures in nonscalding hot water to tolerance (110-113 degrees F) to achieve pain relief (30-90 minutes). Transport should not be delayed, immersion in nonscalding hot water may be continued during transport.
5. Remove any visible pieces of the spine(s) or sheath. Gently wash wound with soap and water, then irrigate vigorously with fresh water (avoid scrubbing).

ALS LEVEL 1: PARAMEDIC ONLY

1. Refer to [Pediatric Pain Protocol 3.1.5](#) for pain management.

ALS LEVEL 2: MEDICAL CONTROL

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1. Call medical control or medical director for any questions or concerns.

Marine Animal Stings - Jellyfish, Man-of-War, Sea Nettle, Irukandji, Anemone, Hydroid, Fire Coral

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. [Trauma Supportive Care Protocol 3.1.4](#), if indicated
Consider need for [Pediatric Protocol 3.7.1 - Allergic Reactions/Anaphylaxis](#).
3. Rinse the skin with seawater (Do not use fresh water, do not apply ice, do not rub the skin).
4. Apply soaks of acetic acid 5% (vinegar) until pain is relieved. If vinegar is not available, use a paste of baking soda or unseasoned meat tenderizer.
5. Remove large tentacle fragments using forceps (use gloves to avoid contact with bare hands).
6. Apply a lather of shaving cream or a paste of baking soda and shave the affected area with edge of flat surface (e.g. credit card).
7. Apply heat pack to area.

ALS LEVEL 1: PARAMEDIC ONLY

1. Refer to [Pediatric Pain Protocol 3.1.5](#) for pain management.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Human Bites

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. [Trauma Supportive Care Protocol 3.1.4](#) if indicated.
3. Wound care - BLS (do not use hydrogen peroxide on deep puncture wounds or wounds exposing fat). Clean area with soap and water.
4. Advise dispatch to contact PD for possible domestic violence.

ALS LEVEL 1: PARAMEDIC ONLY

1. Refer to [Pediatric Pain Protocol 3.1.5](#) for pain management.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



3.6.3 CARBON MONOXIDE POISONING

Purpose: Carbon Monoxide poisoning should be suspected when the patient has been exposed to the products of combustion (e.g. smoke, automobile exhaust, exhaust fumes from fuel powered machinery, etc.) and are experiencing symptoms. These symptoms may vary with the level of carbon monoxide exposure. See [Hazardous Exposure Chemical Treatment Guideline](#) for more details.

Mild CO exposure signs and symptoms include: headache, nausea/vomiting, poor concentration, irritability, agitation, and anxiety.

Moderate to severe CO exposure signs and symptoms include: altered mental status, chest pain, cardiac dysrhythmias, pale skin, cyanosis, seizures, and rarely cherry red skin.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol](#) 3.1.3.
2. Remove patient from hazardous area.
3. Administer high-flow oxygen (100%). Ventilatory support as needed/indicated (see [Peds Airway Management Protocol](#))

ALS LEVEL 1: PARAMEDIC ONLY

1. Consider need to intubate.
2. Treat specific dysrhythmias (see [Pediatric Cardiac Dysrhythmia Protocol](#) 3.3).
3. Treat seizures according to seizure protocol (see [Pediatric Seizure Protocol](#))

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



3.6.4 ORGANOPHOSPHATE POISONING

Purpose: Organophosphate compounds are used as insecticides in residential as well as commercial agriculture. Organophosphates affect both the parasympathetic (muscarinic effects) and the sympathetic (nicotinic effects) nervous systems. Signs and symptoms are described as the classic SLUDGE syndrome (excessive Salivation, Lacrimation, Urination, Diarrhea, Gastrointestinal distress, and Emesis). The patient may have constricted pupils (miosis). Bradycardia is also common; however stimulation of nicotinic receptors will produce tachycardia. Also see [Chem Exposure Guideline Green](#) for additional information and management guidelines.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. Avoid exposure to patient's sweat, vomit, stool, and vapor emitting from soaked clothes (a).
2. If patient was exposed externally, remove clothing and decontaminate skin.
3. [Medical Supportive Care Protocol 3.1.3](#)
4. [Airway Management Protocol 3.1.2](#), administer high-flow oxygen.
5. Contact Poison Information Center (1-800-282-3171) if any questions or concerns.

ALS LEVEL 1: PARAMEDIC ONLY

1. If patient is symptomatic, administer [Atropine](#)
< 2 yr old: 0.05 mg/kg (max. 3 mg) IM or 0.02 mg/kg IV/IO, repeat q 5-10 minutes until atropinization occurs. (If nerve agent, Start 0.05 mg/kg IM x 1 for mild/moderate sx. Start 0.1 mg/kg IM for severe sx).
2 – 10 yrs: 1 – 2 mg IM/IV/IO q 10 – 30 min prn; Start 1 mg IM/IV x 1. (If nerve agent, Start 1 mg/kg IM x 1 for mild/moderate sx. Start 2 mg/kg IM for severe sx).
> 10 yrs: 1-2 mg IM/IV/IO q 10 – 30 min prn; Start 2 mg IM/IV x 1. (If nerve agent, Start 2 mg/kg IM x 1 for mild/moderate sx. Start 4 mg/kg IM for severe sx).
2. If seizing, see [Pediatric Seizure Protocol 3.5.2](#).
3. Alert emergency department to prepare for contaminated patient.
4. Do not induce vomiting.



ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.
2. Repeat Atropine 0.05 mg/kg IV/IO (maximum 3 mg) every 5-10 minutes until secretions are inhibited.

Note:

(a) If risk of exposure from fumes is high, call HAZMAT team. Refer to appropriate HAZMAT PPE protocol, as the risk of secondary contamination is very high.



3.7

OTHER PEDIATRIC MEDICAL EMERGENCIES



3.7 OTHER PEDIATRIC MEDICAL EMERGENCIES

Overview:

The paramedic should use these protocols to guide him/her through the treatment of patients with other medical emergencies that are exhibiting signs and symptoms. In addition to these protocols, the paramedic may need to refer to additional protocols for continued treatment.



3.7.1 ALLERGIC REACTIONS/ ANAPHYLAXIS

Purpose: This protocol should be used for patients exhibiting signs and symptoms consistent with allergic reaction as follows:

Skin - flushing, itching, hives, swelling, cyanosis.

Respiratory - dyspnea, sneezing, coughing, wheezing, stridor, laryngeal edema, laryngospasm, bronchospasm.

Cardiovascular - vasodilation, increased heart rate, decreased blood pressure.

Gastrointestinal - nausea/vomiting, abdominal cramping, diarrhea.

CNS - dizziness, headache, convulsions, tearing.

Treatment is outlined according to the severity of the allergic reaction (mild, moderate, and severe or anaphylaxis).

Procedure:

Mild Reactions - (redness and/or itching, normal perfusion without dyspnea)

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. [Trauma Supportive Care Protocol 3.1.4](#) if indicated

ALS LEVEL 1: PARAMEDIC ONLY

1. For severe itching, administer [Diphenhydramine \(Benadryl\)](#) 1-2 mg/kg IM/IV (max. 50 mg IM or 25 mg IV).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Moderate Reactions - (edema, hives, dyspnea, wheezing, and normal perfusion)

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. [Trauma Supportive Care Protocol 3.1.4](#) if indicated

ALS LEVEL 1: PARAMEDIC ONLY

1. [Diphenhydramine \(Benadryl\)](#) 1-2 mg/kg (maximum 50 mg IM or 25 mg IV) IM/IV.
2. [Zantac \(Ranitadine\)](#) 2-5 mg/kg po if child able to swallow pills.
3. [Methylprednisolone Sodium Succinate \(Solu-Medrol\)](#) 2 mg/kg IV/IM (maximum dose 125 mg) x 1.

Pediatric Protocols



4. **Epinephrine** (1:1000) 0.01 mg/kg (max. 0.3 mg) IM/SUB-Q (a).
5. If patient has signs of respiratory distress, administer **Albuterol (Ventolin)** 1 nebulizer treatment;
 - a. If <1 year or <10 kg, mix 1.25 mg in 1.5 ml of Normal Saline (0.083%)
 - b. If >1 year or >10 kg, mix 2.5 mg in 3 ml of Normal Saline (0.083%)
 - c. May repeat twice (a)
6. If bronchodilator is administered, add **Ipratropium Bromide (Atrovent)** 0.5mg (0.5 ml) to first nebulize treatment only.
7. May repeat **Epinephrine** (1:1000) 0.01 mg/kg (max. 0.15) SUB-Q (a).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Severe Reactions - (edema, hives, severe dyspnea and wheezing, poor perfusion, and possible cyanosis and laryngeal edema)

BASIC LEVEL: EMT and PARAMEDIC

1. **Medical Supportive Care Protocol 3.1.3**
2. **Trauma Supportive Care Protocol 3.1.4 if indicated**

ALS LEVEL 1: PARAMEDIC ONLY

1. **Diphenhydramine (Benadryl)** 1mg/kg (maximum 50 mg IM or 25 mg IV) IM/IV.
2. **Zantac (Ranitidine)** 2mg/kg po if child able to swallow pills.
3. **Methylprednisolone Sodium Succinate (Solu-Medrol)** 2 mg/kg IV/IM (maximum dose 125 mg) x 1.
4. **Epinephrine** (1:1000) 0.01 mg/kg (max. 0.15 mg) SUB-Q (a).
5. If patient shows signs of respiratory distress, administer **Albuterol (Ventolin)** 1 nebulizer treatment;
 - a. If <1 year or <10 kg, mix 1.25 mg in 1.5 ml of Normal Saline (0.083%)
 - b. If >1 year or >10 kg, mix 2.5 mg in 3 ml of Normal Saline (0.083%)
 - c. May repeat twice (a)
6. If bronchodilator is administered, add **Ipratropium Bromide (Atrovent)** 0.5mg (0.5 ml) to first nebulized treatment only.
7. May repeat **Epinephrine** (1:1000) 0.01 mg/kg (max. 0.15) SUB-Q (a).

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ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Note

- (a) The EPI-Jr.® may be used if other means of Epinephrine administration are not available.



3.7.2 DIABETIC EMERGENCIES

Purpose: This protocol is to be used for those patients whose blood glucose is below 60 mg/dL (see Pediatric Protocol 3.4.1 for newborn).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. Medical Supportive Care Protocol 3.1.3.
2. If patient is conscious with an intact gag reflex, assist with self-administration of oral glucose, if possible.

ALS LEVEL 1: PARAMEDIC ONLY

1. Perform glucose test with finger stick (heel stick for newborn). If glucose is below 60mg/dL (< 40 mg/dl for newborns), administer:
 - a. Neonates: 10% Dextrose: 2-5 ml/kg (0.2-0.5 g/kg)
 - b. Infants: 10% Dextrose: 5 ml/kg (0.5 g/kg)
 - c. Children < 8 yrs: 25% Dextrose: 2 ml/kg (0.5 g/kg) IV/IO
Children > 8 yrs: 50% Dextrose: 1 ml/kg IV/IO (a)
2. Repeat glucose test after 15 minutes with finger stick (heel stick for newborn). If glucose is still below 60 mg/dL (< 40 mg/dl in newborn), repeat dosing as above.
3. If unable to start IV/IO administer Glucagon if patient is:
[< 20kg] 0.5mg SUB-Q/IV/IM x 1, max dose 1mg/dose
[>20 kg] 1 mg SUB-Q/IV/IM x 1, max dose 1mg/dose
Following Glucagon, once patient is alert enough to swallow, give oral glucose. Glucagon efficacy may be limited in glycogen-depleted patients (chronic alcoholics, malnourished, starvation).
4. If blood glucose is >300 mg/dL with signs of dehydration, administer Normal Saline 20 ml/kg IV, unless contraindicated.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Note:

(a) To avoid infiltration and resultant tissue necrosis, Dextrose 25% and 50% should be given slow IV with intermittent aspiration of IV line to confirm IV patency followed by saline flush.



3.7.3 NON-TRAUMATIC ABDOMINAL PAIN

Purpose: This protocol should be used for patients that complain of abdominal pain without a history of trauma (refer to Appendix – [Signs of Child Abuse](#)).

Assessment should include specific questions pertaining to the GI/GU systems.

Abdominal physical assessment includes:

Ask patient to point to area of pain (palpate this area last).

Gently palpate for tenderness, rebound tenderness, distension, rigidity, guarding, and pulsatile masses. Also palpate flank for CVA (costovertebral) tenderness.

Abdominal history includes:

Hx of pain (OPQRST).

Hx of nausea/vomiting (color, bloody, coffee grounds).

Hx of bowel movement (last BM, diarrhea, bloody, tarry).

Hx of urine output (painful, dark, bloody).

Hx of abdominal surgery.

SAMPLE (attention to last meal).

Additional questions should be asked of the female adolescent patient regarding OB/GYN history (see Adult [OB/GYN Emergencies](#)).

An acute abdomen can be caused by: appendicitis, diabetic ketoacidosis, incarcerated hernia, intussusception, cholecystitis, cystitis -UTI (bladder inflammation), duodenal ulcer, diverticulitis, abdominal aortic aneurysm, kidney infection - UTI (urinary tract infection), kidney stone, pelvic inflammatory disease - PID (female), pancreatitis (see [Appendix - Abdominal Pain Differential 7.1](#)).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care protocol](#) 3.1.3
2. [Trauma Supportive Care Protocol](#) 3.1.4, if indicated

ALS LEVEL 1: PARAMEDIC ONLY

1. If decreased perfusion (see Appendix 7.10 - [Pediatric Vital signs](#)), administer fluid challenge of Normal Saline 20 ml/kg IV.



ALS LEVEL 2: MEDICAL CONTROL

1. Consider pain control (see [Pediatric Pain Protocol](#) 3.1.5 for pain scale and medication dosage-same as isolated extremity fracture pain protocol).
2. Call medical control or medical director for any questions or concerns.



3.7.4 NON-TRAUMATIC CHEST PAIN UNDIFFERENTIATED

Purpose: Causes of non-traumatic chest pain in the pediatric patient include: wheezing associated illness, spontaneous pneumothorax, pleurisy, costochondritis, pulmonary embolism, pneumonia, peptic ulcer, drug usage (e.g. stimulants - cocaine), dissecting aortic aneurysm, pericarditis, hiatal hernia, esophageal spasm, cholecystitis, pancreatitis, cervical disk problem, and rarely cardiac problems (see [Appendix Chest Pain Differential](#)). Also refer to [Appendix – Signs of Child Abuse](#) 7.13.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol](#) 3.1.3.
2. [Airway Management Protocol](#) 3.1.2
3. Consider need for other protocols (e.g. Pediatric Protocol 3.2 - [Pediatric Respiratory Emergencies](#)).

ALS LEVEL 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Consider pain control (see [Pediatric Pain Protocol](#) 3.1.5 for pain scale and medication dosage-same as isolated extremity fracture pain protocol).
2. Call medical control or medical director for any questions or concerns.



3.7.5 VIOLENT AND/OR IMPAIRED PATIENT

Purpose: This treatment protocol is used in conjunction with Adult Medical [Protocol- Behavioral Violent Psychiatric Emergencies](#). If patient is violent and an immediate threat to the patient, EMS crew or bystander safety exists, restraint should be used to prevent patient from harming him or herself or others. If patient is not violent, be observant for possibility of violence and avoid provoking patient. Particular caution should be exercised when any “non-lethal” law enforcement device (e.g. pepper spray, taser, etc.) has been employed.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. Have patient placed under Baker Act (or equivalent commitment form) when appropriate and refer to Impaired/Incapacitated Persons Act
2. [Medical Supportive Care 3.1.3](#).
3. [Airway Management 3.1.2](#)
4. Rule out causes other than psychiatric (e.g. drug overdose, ETOH, head trauma, hypoxia, hypoglycemia).
5. Physically restrain patient when appropriate (see Medical [Procedure Physical Restraints 4.28](#)).

ALS LEVEL 1: PARAMEDIC ONLY

1. Administer one of the following benzodiazepines(< 12 yr old contact med control first):
 - a. **Lorazepam (Ativan)** 0.05 to 0.1 mg/kg IV, maximum; 1 mg.
 - b. **Diazepam (Valium)** 0.2 mg/kg (maximum 5 mg) IM/IV or per rectum, may repeat once PRN (up to max. 10 mg) (b).
 - c. **Midazolam (Versed)** 0.1mg/kg (maximum 2mg) IM/IV or Intranasal. May repeat once PRN (up to max. 4 mg) (b).
2. **Diphenhydramine HCL (Benadryl)** 1 mg/kg (maximum 50 mg IM or 25 mg IV) IM or IV (a).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Notes:

- (a) In some instances, IV administration may present a safety concern; therefore IM or intranasal administration of sedatives may be the more desirable route.
- (b) Intranasal administration of benzodiazepines requires the use of a mucosal atomization device (same as IV dose).



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3.7.6 SUSPECTED CHILD ABUSE

Purpose: This protocol should be used when the paramedic suspects that child abuse may have occurred. See [Appendix - Signs of Child Abuse](#) 7.13 and [Report of Abuse](#) 7.12. Child abuse is when a person intentionally inflicts, or allows to be inflicted, physical or psychological injury to a child, which causes or results in risk of death, disfigurement, or distress. Child neglect is when a child's physical, mental, or emotional condition is impaired or in danger because of failure of the legal guardian to supply basic necessities, including: adequate food, clothing, shelter, education, or medical care.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Support Protocol](#) 3.1.3.
2. [Trauma Supportive Care Protocol](#) 3.1.4 if indicated.
3. Advise Police that child abuse is suspected.
4. Protect child from further abuse.
5. Obtain information in a non-judgmental manner.
6. Do not confront caregiver and/or parent.
7. Transport patient to the hospital for evaluation and possible treatment (a).
8. Report suspected child abuse (Florida Child Abuse Hotline:1-800-342-9152) (b).

ALS LEVEL 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Note

(a) If Parent's refuse to have patient transported to hospital, request police assistance.



3.7.7 SICKLE CELL ANEMIA

Purpose: Sickle cell anemia is a chronic hemolytic anemia occurring almost exclusively in African Americans and is characterized by sickle-shaped red blood cells. Sickle cell crisis results from the occlusion of a blood vessel by masses of sickle shaped red blood cells. Pain is the principle manifestation, and this represents the most common type of crisis. Typical pain occurs in the joints and back. Hepatic, pulmonary, or central nervous system involvement can occur, each with its own group of symptoms. Keep in mind that patients with sickle cell disorder have a high incidence of life-threatening disorders at a very young age.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. Provide emotional support

ALS LEVEL 1: PARAMEDIC ONLY

1. IV of normal saline. Give fluid challenge of 20 ml/kg, and then maintain IV at KVO.
2. If pain persist and systolic BP is adequate (see [Appendix – Pediatric Vital Signs 7.10](#)), choose one of the following pain meds:
 - a. [Morphine Sulfate](#) may be given intravenously in increments every 3-5 minutes, titrated to pain to a maximum of 10 mg. Administer at a rate not to exceed 1 mg/min.
 - i. [Pediatric dose](#): 0.1 mg/kg (maximum 10 mg) IV.
 - ii. [Infant dose](#): 0.05 mg/kg IV (a)
 - b. [Fentanyl \(Sublimaze\)](#)

1-3 yrs old:	2 – 3 mcg/kg IV
3 – 12 yrs old:	1 – 2 mcg/kg IV
>12 yrs old:	0.5 – 1 mcg/kg IV

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Note:

- (a) Extreme caution should be used with administering narcotic analgesics to a patient with a $SpO_2 \leq 95\%$



3.7.8 PEDIATRIC FEVER

Purpose: Use this protocol for pediatric patients who are feverish. Child should be awake and able to swallow with no difficulty. You may allow/assist the parent with administration of any medication. Fever in an infant less than 30 days old is potentially very serious. Child should be transported to an emergency department for a possible septic work up. Should parent or legal guardian decline transport, contact supervisor or medical control prior to accepting a refusal.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. Obtain a temperature. If the child is less than two years of age this should be done rectally (or with newer thermo-sensing skin thermometers). Inquire if [Tylenol](#) has been given in previous four hours. If so, do **NOT** administer more Tylenol.
3. Consider cooling the child with tepid water applied with a wet cloth to head, axillary, and groin regions.
4. If transport time is greater than thirty minutes a follow-up temperature should be taken.

ALS LEVEL 1: PARAMEDIC ONLY

1. For a child less than twelve years old who has a temperature greater than 101.5 degrees F. and unimpaired ability to swallow [TYLENOL](#) 15mg/kg PO. may be administered once. (The same dose may be administered rectally if parents have suppositories at home.)
2. Should patient experience a febrile seizure, treat according to [Pediatric Seizure Protocol](#).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Note:

Due to the inability to determine the origin of the fever in the field; this Patient Order Set can only be used when the patient is transported to an Emergency Department.



3.7.9 Pediatric Hyperkalemia

Purpose: This protocol is to be used on pediatric patients found to be in a state of hyperkalemia. Hyperkalemia is a serum potassium level of > 5.5 mEq/L. Hyperkalemia in children can be caused by renal failure, rhabdomyolysis, the use of potassium-sparing diuretics, and adrenal cortical insufficiency. Metabolic acidosis can result in hyperkalemia due to the hydrogen-potassium shift. In the pre-hospital setting, hyperkalemia may be an unintentional adverse consequence of rapid sequence intubation using Succinylcholine. It is important for the paramedic to recognize the developing EKG signs of hyperkalemia following RSI of child in order to initiate immediate therapy. EKG evidence of hyperkalemia includes sudden change in the appearance of the EKG from a NSR to sudden peaked T-waves followed by prolongation of the PR interval as well as widening of the QRS complex. Eventually the P wave drops, the QRS becomes very wide and blends in with the peaked T wave giving the appearance of a sinusoid wave.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Initial Patient A Protocol 3.1.1](#)
2. [Pediatric Airway Management 3.1.2](#)
3. [Medical Supportive Care Protocol 3.1.3](#)
4. Attach cardiac monitor and pulse oximeter if indicated
5. Keep patient warm (except if treating heat stroke, cool patient).

ALS LEVEL 1: PARAMEDIC ONLY

1. Establish IV with NS at KVO
2. Perform 12 lead EKG and confirm changes in EKG from baseline, suggestive of hyperkalemia
 - a. Peaked T-wave
 - b. Prolonged PR interval
 - c. Widening of QRS
3. If iSTAT available, run potassium level on sample of blood. If K⁺ found to be > 5.5 mEq/Liter AND EKG changes as above, proceed with treatment below.
4. If there is strong evidence to suggest hyperkalemia (elevated K⁺ level and/or definite EKG changes) and you are unable to start an IV, place an IO in patient.



5. Give **Albuterol 0.5% solution**; give 2.5mg via nebulizer (DO NOT use Atrovent with the Albuterol when treating hyperkalemia).
6. Give **Sodium Bicarb**; 1 mEq/kg initially IV/IO (1ml/kg of 8.4% solution). In neonates and infants, dilute the 8.4% solution 1:1 with sterile water (not saline) making a 4.2% solution to reduce the hyperosmolarity of the solution.
7. **Calcium Chloride 20 mg/kg IV/IO q 10 min prn**
8. Notify hospital staff ASAP as child will need additional Rx upon arrival (Regular Insulin, Kayexcelate)

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



3.8

PEDIATRIC ENVIRONMENTAL EMERGENCIES



3.8 PEDIATRIC ENVIRONMENTAL EMERGENCIES

Overview: The following protocols cover a range of problems due to the environment, including: trauma due to changes in atmospheric pressure, exposure to heat and cold extremes, water submersion, and exposure to electricity. Initial efforts should focus on removing the patient from the harmful environment.



3.8.1 NEAR DROWNING

Purpose: Near drowning patients are those that have been submerged in fresh or salt water and may or may not be conscious. If the patient is still in open water on arrival of EMS, a Dive Rescue Team should be utilized to remove the patient from the water whenever possible. Additional protocols may be needed for treatment decisions (e.g. [Pediatric Barotrauma Protocol](#) 3.8.4 -).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol](#) 3.1.4 (protect C-spine) .
2. Determine pertinent history (duration of submersion, depth, water temperature, possible seizure, drug and/or alcohol use, possible trauma).
3. Maintain body temperature, dry and warm patient.
4. All near drowning patients should be transported to the hospital, regardless of how well they may seem to have recovered. Delayed death or complications due to pulmonary edema or aspiration pneumonia are not uncommon. The most devastating injury is due to asphyxia.

ALS LEVEL 1: PARAMEDIC ONLY

1. Treat dysrhythmias per specific protocol (see [Pediatric Dysrhythmia Protocol](#) 3.3).
2. Consider Nasogastric Tube (see [Medical Procedure NG Insertion](#) 4.22) (b).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Notes

(a) The routine use of abdominal thrusts for near-drowning victims is not recommended. This maneuver should only be used in cases of FBAO (see [Medical Procedure 4.15 – Foreign Body Obstructed Airway](#)).

(b) Any near-drowning patient with a decreased ability to protect their airway, with gross abdominal distension, or who requires ventilator assistance needs an NG tube.



3.8.2 HEAT RELATED EMERGENCIES

Purpose: Hyperthermia occurs when the patient is exposed to increased environmental temperature and can manifest as heat cramps, heat exhaustion, or heat stroke. Certain drugs may cause an increase in temperature (e.g. cocaine, ecstasy, etc.)

Some tympanic thermometers (Braun Thermoscan™ Pro-1 and Pro 3000) will register from 68 – 108 degrees F (tympanic thermometers should not be used in infants (<1yr)).

<u>Heat Cramps</u>	signs and symptoms include: muscle cramps of the fingers, arms, legs, or abdomen, hot sweaty skin, weakness, dizziness, tachycardia, normal BP, and normal temperature.
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<u>Heat Exhaustion</u>	signs and symptoms include: cold and clammy skin, profuse sweating, nausea/vomiting, diarrhea, tachycardia, weakness, dizziness, transient syncope, muscle cramps, headache, positive orthostatic vital signs, normal or slightly elevated temperature.
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<u>Heat Stroke</u>	signs and symptoms include: hot dry skin (sweating may be present), confusion and disorientation, rapid bounding pulse followed by slow weak pulse, hypotension with low or absent diastolic reading, rapid and shallow respirations (which may later slow), seizures, coma, elevated temperature above 105 degrees F.
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Procedure:
Heat Cramps and Heat Exhaustion

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#)
2. [Trauma Supportive Care Protocol 3.1.4](#) if indicated.
3. Remove from warm environment and cool patient.
4. Monitor temperature.
5. For mild to moderate heat cramps and heat exhaustion, if patient is conscious, encourage patient to drink salt containing fluids (e.g. half-strength Gatorade® or 10K®).

ALS LEVEL 1: PARAMEDIC ONLY

1. If heat cramps are severe or patient's level of consciousness is diminished, administer fluid challenge of Normal Saline 20 ml/kg IV.



ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Heat Stroke

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol](#) 3.1.3
2. [Trauma Supportive Care Protocol](#) 3.1.4 if indicated
3. Remove from warm environment and aggressively cool patient. Remove patient's clothing and cover patient with wet sheets. Also, turn A/C and fans on high and apply ice packs to head, neck, chest and groin.
4. Monitor temperature. Cool patient to 102 degrees F, then remove wet sheets, ice packs, and turn off fans (avoid lowering temperature too much).

ALS LEVEL 1: PARAMEDIC ONLY

1. Treat hypotension with a 500ml bolus of IV fluid followed by an IV drip at a rate of 250 ml/hr. Vigorous IV fluid resuscitation should be avoided unless severe dehydration is present. Avoid using vasopressors and anticholinergic drugs (may potentiate heat stroke by inhibiting sweating). Administer fluid challenge of Normal Saline 20 ml/kg IV.
2. Treat seizures as per [Pediatric Seizure Protocol](#)

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



3.8.3 COLD RELATED EMERGENCIES

Purpose: Factors that predispose and/or cause a patient to develop hypothermia include: geriatric and pediatric patients, poor nutrition, diabetes, hypothyroidism, brain tumors or head trauma, sepsis, use of alcohol and certain drugs, and prolonged exposure to water or low atmospheric temperature. Hypothermia patients can be divided into three categories: Mild (temperature 94-97 degrees F), Moderate (temperature 86-94 degrees F), and Severe (temperature <86 degrees F).

It should be noted that most oral thermometers will not register below 96 degrees F. However, some tympanic thermometers (Braun Thermoscan™ Pro-1 and Pro 3000) will register from 68 – 108 degrees F (tympanic thermometers should not be used in infants).

Mild to Moderate hypothermia patients will generally present with shivering, lethargy, and stiff, uncoordinated muscles.

Severe hypothermia patients may have altered mental status, ranging from confusion to lethargy or coma. Shivering will usually stop and physical activity will be uncoordinated. In addition, severe hypothermia will frequently produce an Osborn wave or J wave on the ECG, as well as dysrhythmias (bradycardia, ventricular fibrillation).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3 \(d\)](#)
2. [Trauma Supportive Care Protocol 3.1.4](#) if indicated (a).
3. Remove all wet clothes and dry patient.
4. Protect from heat loss and wind chill.
5. Maintain horizontal position.
6. Avoid rough movement and excess activity (careful gentle handling) (b) (c) (d).
7. Monitor temperature.
8. Add heat to patient's head, neck, chest, and groin.
9. For severe hypothermia, warm IV fluids, if possible.
10. For Severe Hypothermic Cardiac Arrest: Start CPR(c).



ALS LEVEL 1: PARAMEDIC ONLY

1. For VF or pulseless VT, defibrillate x 1 @ 2 J/kg and immediately resume CPR for 5 cycles (or two minutes) before checking rhythm (e).
2. Intubate and ventilate with warm humidified oxygen, if possible.
3. Establish IV with warm Normal Saline.
4. Determine blood glucose and treat as per [Peds Hypoglycemic Protocol](#).

If temperature is above 86 degrees F:

4. If patient's core temperature $\geq 30^{\circ}\text{C}$ (86°F), follow appropriate dysrhythmia treatment (see [Pediatric Cardiac Dysrhythmia Protocol 3.3](#)) (d) (e).

If temperature is below 86 degrees F:

5. Continue CPR and transport immediately. Do not treat dysrhythmias in severe hypothermia (warm patient prior to treatment) (e).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

Note:

- (a) Cases of frostbite should be bandaged with dry sterile dressings and transported without attempting rewarming in the prehospital setting.
- (b) Manipulation can precipitate ventricular fibrillation in the irritable hypothermic myocardium
- (c) To avoid inappropriate chest compressions, a patient who is unmonitored or in a "non-arrested rhythm" (a rhythm other than ventricular fibrillation or asystole, such as sinus bradycardia or atrial fibrillation) should be examined carefully for respiratory activity and pulses. 30 to 45 seconds should be spent attempting to detect respiratory activity and palpate a pulse. If none detected, CPR should be initiated.
- (d) Although dysrhythmias in hypothermic patient may represent an immediate threat to life, most rhythm disturbances (e.g., Sinus bradycardia, atrial fibrillation or flutter) require no therapy and revert spontaneously with rewarming.
- (e) Ventricular fibrillation may be refractory to therapy until the patient is rewarmed. The hypothermic heart is relatively resistant to atropine, pacing, and counter shock. The American Heart Association suggests a single defibrillation attempt. If this is unsuccessful, CPR should be instituted and rapidly rewarming begun. Defibrillation should be reattempted when the core temperature reaches 30°C (86°F).



3.8.4 BAROTRAUMA / DECOMPRESSION ILLNESS - DIVE INJURIES

Purpose: Barotrauma and decompression illness is caused by changes in the surrounding atmospheric pressure beyond the body's capacity to compensate for excess gas load. These injuries are most commonly associated with the use of SCUBA (Self-Contained Underwater Breathing Apparatus). SCUBA diving emergencies can occur at any depth with the most serious injuries manifesting symptoms after a dive. It should be understood that if a patient took a breath underwater, from any source of compressed gas (e.g. submerged vehicle, SCUBA, etc) while greater than three (3) feet in depth then ascended to the surface, the patient may be a victim of barotrauma. Barotrauma may cause several injuries to occur including: arterial gas embolism (AGE), pneumothorax, pneumomediastinum, subcutaneous emphysema, and the "squeeze". Decompression illnesses may also include decompression sickness ("Bends").

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol](#) 3.1.4,
2. High-flow O₂.
3. Place patient supine. Vomiting patient s should be placed in the left lateral decubitus position to prevent aspiration. (c).
4. Complete the [Dive Accident Signs and Symptoms](#) Checklist (see Forms Section).
5. Start [Dive History Profile](#) (see Forms Section), if possible (the patient's dive buddy maybe helpful in answering many of these questions).
6. Start [Rapid Neuro Field Exam Record](#) (see Forms Section).
7. Whenever possible, have the legal authority in charge (e.g. police, Florida Marine Patrol, U.S. Coast Guard, etc.) secure all of the victims dive gear with proper chain of custody for testing, analysis, etc.
8. Manage patient according to appropriate protocol(s).
9. Transport to closest Emergency Department or Trauma Center.
10. If using air transport for diving accident patient; cabin altitude must be below 1000 feet.
11. Contact Diver's Alert Network (DAN) at Duke University Medical Center collect at (919) 684-4326 or (919) 648-8111 for further assistance (a).

ALS LEVEL 1: PARAMEDIC ONLY

1. None .

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ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

NOTE:

- (a) DAN may be contacted while on scene or after arrival at the hospital. If at hospital, give name of ED physician and ED phone number.
- (b) The two most serious dive related accidents are **Air Embolism** (arterial gas embolism), and **Decompression Sickness** (venous gas embolism)
- (c) According to the U.S. Navy Diving Manual, dive accident victims should be transported lying flat. Although most of the diving community teaches that victims should be transported with the victim on his left side, head lower than the rest of the body. When placing a victim in the Dive Accident Management Position lay him flat on a backboard. The only time a victim should be placed on his side is if a pneumothorax exists, or there is a possibility of regurgitation. If the patient has a pneumothorax, place him on the affected side otherwise, left lateral decubitus if vomiting.



3.8.5 ELECTRICAL EMERGENCIES

Purpose: A wide range of injuries can be caused from a lightning strike or contact with electricity. Electrical injury can occur from direct contact, an arc, or a flash of the electricity and a direct hit or a splash from lightning. The movement of electrical current through the body can cause violent muscle contractions that can lead to fractures, and therefore, the C-spine should be protected. The thermal energy can cause external burns, but in many cases the majority of thermal damage is internal, with few external signs of injury. Dysrhythmias are also common (e.g. ventricular fibrillation). The rescuer should be sure that the patient is no longer in contact with the electrical current before initiating treatment.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol](#) 3.1.4 (protect C-spine).
2. Treat burns per [Pediatric Burn Protocol](#) 3.9.7.
3. Consider need to transport to a trauma center

ALS LEVEL 1: PARAMEDIC ONLY

1. Treat dysrhythmias per specific protocol (see [Pediatric Cardiac Dysrhythmida Protocol](#) 3.3).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



3.9 PEDIATRIC TRAUMA EMERGENCIES



3.9 PEDIATRIC TRAUMA EMERGENCIES

Overview: These protocols cover specific types of injuries and their treatment. The initial assessment of the trauma patient should include determination of trauma alert criteria (see appendix for trauma alert criteria). When the situation demands (e.g. trauma alert criteria is met), scene time should be limited as much as possible (e.g. 10 minutes) and the patient should be expeditiously transported to a trauma center. Do not delay transport to establish vascular access or bandage and splint every injury. Priority should be given to airway management, rapid preparation for transport (e.g. full immobilization on a backboard) and control of gross hemorrhage.

If a vascular access is obtained and hypovolemia is suspected (e.g. signs and symptoms of shock), a fluid challenge of 20 ml/kg should be administered. If the patient is still in shock, repeat fluid challenge at 20 ml/kg until a maximum of 60 ml/kg is administered. However, administration of large volumes of IV fluids has been found to be deleterious to the survival of patients with uncontrolled hemorrhage, internally or externally. In recent studies (NEJM 1994), it has been shown that maximal fluid resuscitation may increase the bleeding, preventing the formation of a protective thrombus or dislodging it once the intraluminal pressure exceeds the tamponading pressure of the thrombus. Therefore, **consult with the physician should be made prior to the administration of large volumes of IV fluids when the transport time is relatively short (e.g. < 20 minutes).**

Avoid the use of vasopressor agents (e.g. [Dopamine](#)) in trauma patients that are hypotensive (see [appendix- pediatric vital signs](#))

The pregnant adolescent female in her third trimester should be placed on her left side for transport. If the injuries require the use of a backboard, following full immobilization to the backboard, said board should be tilted to the left. Failure to follow this practice may cause hypotension due to decreased venous return.



3.9.1 HEAD AND SPINE INJURIES

Purpose: If history, symptoms, or signs of head or spinal injuries are present, manually immobilize the head and neck while maintaining a patent airway using a modified jaw-thrust method. Immobilization of the entire spine is indicated following initial stabilization.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol](#) 3.1.4. with appropriate C-Spine precautions
2. If not hypotensive (see [Appendix 7.10 - Pediatric Vital Signs](#)), elevate head of backboard 30 degrees (12-18 inches).
3. If child is asleep upon arrival, gently arouse him/her to assess the level of consciousness or irritability. If the child is upset, allow some time for the child to settle down before continuing with the exam.
4. Perform a through head-to-toe assessment for trauma, including an age-appropriate neurologic exam and musculoskeletal exam.
5. Assess for and document a [Glasgow Coma Scale](#)

ALS LEVEL 1: PARAMEDIC ONLY

- 1: If signs of brainstem herniation exist (e.g. pupillary dilation, asymmetric pupillary reactivity, or motor posturing), consider intubation and ventilate @ 20/minute for child and 30/minute for infant
2. If patient is seizing, see [Pediatric Seizure Protocol](#) 3.5.2 (avoid glucose containing solutions and medications).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



3.9.2 EYE INJURIES

Purpose: This protocol covers a variety of injuries to the eye. If other injuries to the body exist, priority of care should be given as appropriate.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol](#) 3.1.4 (establish IV PRN).
2. Remove or ask the patient to remove contact lenses, if still in the affected eye(s).
3. For penetrating object, stabilize object and cover affected eye with an ocular shield or similar rigid device. Cover both eyes to minimize eye movement. Avoid direct pressure on eye or penetrating object.
4. If eyeball has been forced out of the socket, cover the entire eye area with a rigid container, such as a disposable drinking cup. Avoid contact with the exposed globe. If bleeding, control by direct pressure with a sterile dry dressing.
5. If there are signs and symptoms or suspicion of ocular exposure to chemicals or foreign body, without obvious or suspected penetrating injury or laceration of the cornea or globe, irrigate with Normal Saline IV solution.

ALS LEVEL 1: PARAMEDIC ONLY

1. none

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.
2. Contact med control for pain medication order if needed.



3.9.3 CHEST INJURIES

Purpose: This protocol covers both blunt and penetrating chest trauma and should be part of initial resuscitation if breathing is compromised.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol 3.1.4.](#)
2. Penetrating injuries to the chest or upper back should be covered immediately with an occlusive dressing (e.g. Vaseline gauze).
3. Do not attempt to remove an impaled object (stabilize with bulky dressing, etc.). If impaled object is very large or unwieldy, attempt to cut object to no less than six inches from chest.

ALS LEVEL 1: PARAMEDIC ONLY

1. Do not delay transport to establish vascular access or bandage and splint every injury
2. For tension-pneumothorax, with evidence of respiratory and circulatory compromise, decompress chest on affected side (see [Medical Procedure Needle Decompression 4.26](#)).
3. For massive flail chest with severe respiratory compromise, intubate and ventilate @ 20/minute for child and 30/minute for infant. If flail chest does not cause severe respiratory compromise, stabilize externally using ipsilateral arm in sling and swathe.
3. For crush injury, establish two large bore IVs. If crushing object is still on patient, infuse a minimum of 20 ml/kg of fluid before attempting to lift object off of patient.
4. For traumatic asphyxia, [Sodium Bicarbonate \(8.4%\)](#) 1 mEq/kg IV (a).
5. If a vascular access is obtained (IV or IO) and hypovolemia is suspected (e.g. signs and symptoms of shock), a fluid challenge of 20 ml/kg should be administered. If the patient is still in shock, repeat fluid challenge at 20 ml/kg until a maximum of 60 ml/kg is administered.
6. Avoid the use of vasopressors agents (e.g. Dopamine) in trauma patients that are hypotensive

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.
2. Consult with the physician should be made prior to the administration of large volumes of IV fluids when the transport time is relatively short (e.g. < 20 minutes).

Note:

(a) [Sodium Bicarbonate](#) (4.2%) 1 mEq/kg IV/IO should be administered to infants (dilute 8.4% 1:1 with Normal Saline to make 4.2%).



3.9.4 ABDOMINO-PELVIC INJURIES

Purpose: This protocol covers blunt and penetrating abdomino-pelvic trauma. Penetrating injuries may also include the chest (see [Pediatric Protocol 3.9.3 - Chest Injuries](#)). Also refer to [Appendix – Signs of Child Abuse](#).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol 3.1.4](#). (CALL [TRAUMA ALERT](#) IF APPROPRIATE)
2. For penetrating injuries, cover with an occlusive dressing (e.g. Vaseline gauze).
3. For evisceration, cover organs with saline soaked sterile dressing and then cover with an occlusive dressing (e.g. foil). Do not attempt to put organs back into abdomen.
4. Do not log roll patient with suspected pelvic fracture (may use scoop stretcher if appropriate to patient size).

ALS LEVEL 1: PARAMEDIC ONLY

1. Do not delay transport to establish vascular access or bandage and splint every injury
2. If a vascular access is obtained and hypovolemia is suspected (e.g. signs and symptoms of shock), a fluid challenge of 20 ml/kg should be administered. If the patient is still in shock, repeat fluid challenge at 20 ml/kg until a maximum of 60 ml/kg is administered.
3. Avoid the use of vasopressors agents (e.g. Dopamine) in trauma patients that are hypotensive

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.
2. Consult with the physician should be made prior to the administration of large volumes of IV fluids when the transport time is relatively short (e.g. < 20 minutes).



3.9.5 EXTREMITY INJURIES

Purpose: This protocol covers open and closed injuries to the extremities, including amputation.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol](#) 3.1.4 (establish IV PRN).
2. Any fracture or suspected fracture should be splinted appropriately with ice to area. Remove and secure all jewelry. Check and document distal neurovascular status pre and post splinting.
3. Angulated fractures should be aligned using proximal and distal traction during splinting, except in fractures that involve a joint, which should be splinted in the position found.
4. Traction splints should be used in cases of femur fractures, unless a pelvic fracture is suspected. Sheet splint suspected pelvic fractures.
5. Amputations should be dressed with bulky dressings and amputated part should be wrapped in moistened sterile gauze and placed in plastic bag and then the bag placed on ice for transportation to the hospital.
6. Do not delay transport to establish vascular access or bandage and splint every injury

ALS LEVEL 1: PARAMEDIC ONLY

1. See [Pediatric Pain Protocol](#) 3.1.5 for pain management.
2. If a vascular access is obtained and hypovolemia is suspected (e.g. signs and symptoms of shock), a fluid challenge of 20 ml/kg should be administered. If the patient is still in shock, repeat fluid challenge at 20 ml/kg until a maximum of 60 ml/kg is administered.

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.
2. Consult with the physician should be made prior to the administration of large volumes of IV fluids when the transport time is relatively short (e.g. < 20 minutes).



3.9.6 TRAUMATIC ARREST

Purpose: The decision to attempt resuscitation of a traumatic arrest should be based on the paramedic's judgment as to the possibility of survival and/or the possibility of organ harvest. There are instances where resuscitation of a traumatic arrest is not warranted (see [Administrative Guidelines-1.2.5 DNR/Resuscitation Considerations/DOA](#)).

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol](#) 3.1.4.
2. Rapidly prepare patient for transport and then expeditiously transport patient to the trauma center.

ALS LEVEL 1: PARAMEDIC ONLY

1. If IV(s) can be established, infuse Normal Saline 20 ml/kg up to 60 ml/kg IV.
2. Avoid use of vasopressors in cases of suspected hypovolemia.
3. Call [Trauma Alert](#) if applicable

ALS LEVEL 2: MEDICAL CONTROL

3. Call medical control or medical director for any questions or concerns.



3.9.7 BURN INJURIES

Purpose: Burns can be caused by thermal, chemical, and electrical sources. If an electrical burn is suspected, also see [Pediatric Protocol 3.8.5 - Electrical Emergencies](#). Remember that burn patients are volume depleted. However, burns do not bleed; therefore, look for other sources of bleeding. Assume that any patient with compromised perfusion has other injuries and treat accordingly. Many burn injuries are associated with inhalation injury. The signs and symptoms of inhalation injury include: nasal and oropharyngeal burns, charring of the tongue or teeth, sooty (blackened), sputum, singed nasal and facial hair, abnormal breath sounds (e.g. stridor, rhonchi, wheezing, etc.), and respiratory distress. In cases of inhalation injury, attention should be given to the patency of the airway. Acute swelling can cause an airway obstruction. The Paramedic should consider the need for early intubation to avoid a complete airway obstruction that requires a cricothyroidotomy.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Trauma Supportive Care Protocol](#) 3.1.4.
2. Stop the burning process, if necessary (do not cause hypothermia):

Thermal Burns: Lavage the burned area with tepid water (sterile, if possible) to cool skin. Do not attempt to wipe off semisolids (grease, tar, wax, etc.).

Dry Chemical Burns: Brush off dry powder, then lavage with copious amounts of tepid water (sterile, if possible) for 15 minutes.

Liquid Chemical Burns: Lavage the burned area with copious amounts of tepid water (sterile, if possible) for 15 minutes. (When Phenol has caused the burn, flush with copious amounts of tepid water and then apply vegetable oil to area, if available. Isopropyl alcohol may be used for very small areas.)

3. Remove clothing from around burned area, but do not remove/peel off skin or tissue.
4. Remove and secure all jewelry and tight fitting clothing.



5. Assess the extent of the burn using the Modified Rule of Nines and the degree of burn severity (see [Appendix - Burn Severity Categorization](#) and [Appendix - Rule of Nines](#)). An additional method is to use the palmar surface of the patient as 1% BSA.
6. Apply dressing to burn area as follows:
 - a. If there is $\geq 20\%$ 2nd degree or 5% 3rd degree burns, cover burned areas with dry sterile dressings.
 - b. If there is $< 20\%$ 2nd degree and 5% 3rd degree burns, apply wet sterile dressings to burned areas for 15 minutes to aid in pain control.
7. Prevent hypothermia, keep patient warm and insure that all outer layers of dressings are dry.

ALS LEVEL 1: PARAMEDIC ONLY

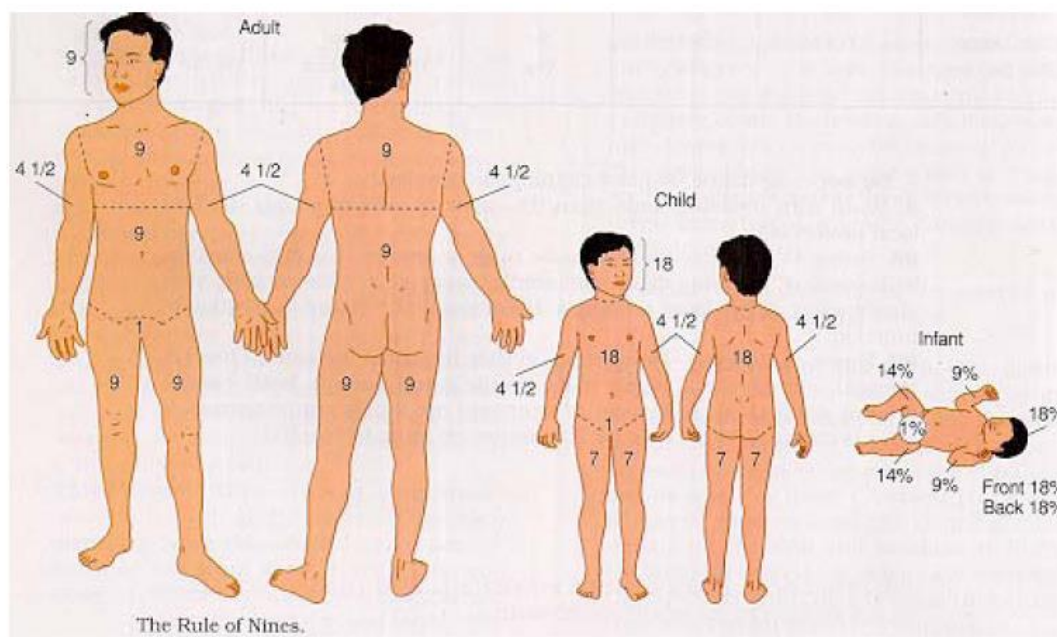
1. If respiratory distress, or airway burns exist, prepare to intubate ([RSI](#) if indicated) or support/assist ventilations.
2. Establish IV (may start IO for severe burns) of Lactated Ringers or Normal Saline. IV fluid administration based on the
 - a. **Parkland formula:** % body surface burned X wt (in kg) X 4 cc/kg. One half of this total is given in the first 8 hours from time of burn (if burn occurred 2 hours before you start treatment, then the first half of the amount needs to be given over the next 6 hours).
3. If pulseless or apneic, go to Cardiac Arrest Protocol 3.3.6.
4. If additional injuries, go to specific protocol.
5. For pain management, (see [Pediatric Pain Management Protocol](#) 3.1.5).

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



Burn Classification	Characteristics
Minor burn injury	◆1° burn ◆2° burn < 15% BSA in adults ◆2° burn < 5% BSA in children/aged ◆3° burn < 2% BSA
Moderate burn injury	◆2° burn 16-25% BSA in adults ◆2° burn 5-20% BSA in children/aged ◆3° burn 2-10% BSA
Major burn injury	◆2° burn > 25% BSA in adults ◆2° burn > 20% BSA in children/aged ◆3° burn > 10% BSA ◆Burns involving the hands, face, eyes, ear feet, or perineum ◆Most patient with inhalation injury, electric injury, concomitant major trauma, or significant pre-existing diseases



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3.10

CHILDREN WITH SPECIAL HEALTHCARE NEEDS



3.10 CHILDREN WITH SPECIAL HEALTHCARE NEEDS:

Overview: These protocols cover specific types of special healthcare needs in pediatric patients. “Children with special healthcare needs are those who have or are at risk for chronic physical, developmental, behavioral, and emotional conditions that necessitate use of health and related services of a type or amount not usually required by typically developing children.”

The general approach to children with special healthcare needs includes the following:

1. Priority is given to the ABCs.
2. Do not be overwhelmed by the machines.
3. Listen to the caregiver.
4. If a nurse is present, rely on their judgment.
5. Remember...the child’s cognitive level of function may be altered.
6. Assume that the child can understand exactly what you say.
7. Bring all medications and equipment to the hospital.

Obtaining a history includes asking the parent/caregiver the following:

1. Child’s normal vital signs.
2. Child’s actual weight.
3. Developmental level of the child.
4. Child’s allergies – include latex.
5. Pertinent medications/therapies.

American Heart Association: PALS Provider Manual, 2002: p.287.



3.10.1 HOME MECHANICAL VENTILATORS

Purpose: Home mechanical ventilators may be indicated for chronically ill children with abnormal respiratory drive, severe chronic lung disease, or severe neuromuscular weakness. Some children require continuous mechanical ventilation, while others only require intermittent support during sleep or acute illness. Home ventilators may either be volume limited or pressure limited. All are equipped with alarms.

Types of ventilator alarms:

1. Low pressure or apnea – may be caused by a loose or disconnected circuit or an air leak in the circuit or at the tracheostoma, resulting in inadequate ventilation.
2. Low power – caused by a depleted battery.
3. High pressure – can be caused by a plugged or obstructed airway or circuit tubing, by coughing, or by bronchospasm.
4. Setting error – is caused by ventilator settings outside the capacity of the equipment.
5. Power switchover – occurs when the unit switches from alternating-current power to the internal battery.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3](#).
2. If ventilator-dependant child is in respiratory distress and the cause is not easily ascertained and corrected, remove the ventilator and provide assisted manual ventilations with a bag-valve device.
3. Consider need for other protocols (e.g. Pediatric Protocol 3.2 - [Pediatric Respiratory Emergencies](#)).
4. Don't hesitate to ask the parents or caregiver for help managing the home ventilator since they are likely well versed on its use.

ALS LEVEL 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

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3.10.2 TRACHEOSTOMY

Purpose: Tracheostomies are indicated for long-term ventilatory support, to bypass an upper airway obstruction, and to aid in the removal of secretions. Tracheostomies come in neonatal, pediatric, and adult sizes and can be either single lumen or double lumen. Special attachments include: tracheostomy nose (filtration device), tracheostomy collar (for oxygen or humidification), and Passymuir valve (speaker valve).

Signs of tracheostomy tube obstruction:

1. Excess secretions.
2. No chest wall movement.
3. Cyanosis.
4. Accessory muscle use.
5. No chest wall rise with bag-valve ventilations.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3.](#)
2. If obstruction is present, inject 1-3 ml of Normal Saline into the tracheostomy tube and suction PRN (set suction at 100 mm Hg or less).
3. If unable to clear obstruction by suctioning, remove tracheostomy tube and insert new tube (same size or one size smaller). DO NOT FORCE TUBE. If long term trach patient, parent and/or caregiver usually familiar with this procedure so allow them to assist if they offer.
4. If unable to insert new tracheostomy tube or if unavailable, insert endotracheal tube of similar size into stoma and ventilate with bag-valve-device PRN.
5. If unable to insert endotracheal tube, ventilate with bag-valve-mask over stoma or over patient's mouth while covering stoma PRN.
6. Consider need for other protocols (e.g. [Pediatric Protocol 3.2 - Pediatric Respiratory Emergencies](#)).

ALS Level 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.

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3.10.3 CENTRAL VENOUS LINES

Purpose: Central venous lines are indicated for administration of medications, delivery of chemotherapy, nutritional support, infusion of blood products, and blood draws. Types of central venous lines include: Broviac/Hickman, Port-a-cath/Med-a-port, and percutaneous intravenous catheters (PIC). Central venous line emergencies include: catheter coming completely out, bleeding at the site, catheter broken in half, blood embolus, thrombus, air embolus, and internal bleeding. The uses of SUB-Q ports require special training and should not be used for IV access unless you have been trained and signed off to do so by medical director.

Signs of blood embolus, thrombus, air embolus, and internal bleeding:

1. Chest pain.
2. Cyanosis.
3. Dyspnea.
4. Shock.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3.](#)
2. If catheter is completely out, apply direct pressure to site.
3. If there is bleeding at the site, apply direct pressure.
4. If catheter is broken in half, clamp end of remaining tube.
5. If suspected blood embolus, thrombus, or internal bleeding: clamp line.
6. If suspected air embolism, clamp line and place patient on left side.
7. Consider need for other protocols (e.g. [Pediatric Protocol 3.2 - Pediatric Respiratory Emergencies](#)).

ALS Level 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.



3.10.4 FEEDING TUBES

Purpose: Feeding tubes are indicated for administration of nutritional supplements and in patients that have an inability to swallow. Types of feeding tubes include: nasogastric tube (temporary) and gastrostomy tubes (G tube). Types of G tubes include those that are surgically placed, percutaneous endoscopic gastrostomy tubes, PEG tubes, and jejunal tubes (J-tube). Complications include: leaks, bleeding around the site, and displacement of the tube.

Procedure:

BASIC LEVEL: EMT and PARAMEDIC

1. [Medical Supportive Care Protocol 3.1.3.](#)
2. If catheter is completely out, apply direct pressure to site.
3. If there is bleeding at the site, apply direct pressure.

ALS LEVEL 1: PARAMEDIC ONLY

1. None

ALS LEVEL 2: MEDICAL CONTROL

1. Call medical control or medical director for any questions or concerns.