## e-Table 1. EMS protocols across the United States of America (table focusing on pediatric instructions).

| STATE      | Statewide protocol available?  | EMS type /<br>technician level | BZD included in the protocol?  Types, dosage and route of administration recommended?  BZD re-dosing instructions or consultation call?   | Non-BZD ASM included in the protocol? |
|------------|--|--------------------------------|---|---------------------------------------|
|            | Yes  | Basic                          | No  | No                                    |
|            |  | Advanced/<br>Intermediate      | No  | No                                    |
| Alabama    |  | Paramedic                      | - Lorazepam 0.1 mg/kg slow IV, max 2 mg Midazolam 0.1 mg/kg slow IV/IM or 0.2 mg/kg IN via atomizer, max 5 mg. * Midazolam IN preferred drug for pediatric patients if available. Suggested phone call if maximum dosage.   | No                                    |
| Alaska     | Yes<br>(NASEMSO<br>model)  | No divisions on protocol       | - Midazolam 0.2 mg/kg IM preferred, or IN (max 10 mg); 0.1 mg/kg IV or IO, max 4mg Diazepam 0.1 mg/kg IV or IO, max 4mg; 0.2 mg/kg PR, max 10 mg Lorazepam 0.1 mg/kg IV or IO, max 4mg. *IN/IM preferred over PR/IV/IO routes. Consider consultation if not trained personnel or 2 doses of BZD administered. | No                                    |
|            | Yes  | EMT                            | No  | No                                    |
|            |  | AEMT                           | No  | No                                    |
| Arizona    |  | EMT-I / Paramedic              | <ul> <li>- Midazolam 0.2 mg/kg IM/IN, max 5 mg if &lt; 40 kg, max 10 mg if ≥ 40kg; 0.1 mg/kg IV slow over 2 min, max 4 mg.</li> <li>- Lorazepam 0.1 mg/kg IV slow over 2 min, max 4 mg.</li> <li>May repeat for total of 2 doses regardless of route.</li> </ul>  | No                                    |
| Arkansas   | Yes<br>(NASEMSO<br>model)  | No divisions on protocol       | - Midazolam 0.2 mg/kg IM preferred, or IN (max 10 mg); 0.2 mg/kg IV or IO, max 4mg Diazepam 0.1 mg/kg IV or IO, max 4mg; 0.2 mg/kg PR, max 10 mg Lorazepam 0.2 mg/kg IV or IO, max 4mg. *IN/IM preferred over PR/IV/IO routes. Consider consultation if not trained personnel or 2 doses of BZD administered. | No                                    |
| California | No (e.g. Los<br>Angeles<br>County,<br>including Los<br>Angeles city) | No divisions on protocol       | -Midazolam (5mg/ml) 0.1mg/kg IM/lV; 0.2 mg/kg IN. May repeat x1 in 2 min (max 2 doses prior to base contact).  Contact base for persistent seizure and for additional medication orders. May repeat midazolam as above, max 4 total doses.  | No                                    |
|            | No (e.g.   | EMT, AEMT                      | No  | No                                    |
| Colorado   | Denver<br>metropolitan<br>area)                                      | EMT-I, paramedic               | - Midazolam 0.1 mg/kg IV/IO (max 2 mg); 0.2 mg/kg IN/IM (intranasal preferred) (max 5mg) Diazepam 0.3 mg/kg IV/IO (max 5 mg) Lorazepam 0.05 mg/kg IV; 0.1 mg/kg IN/IM (intranasal preferred). All ASM may be repeated x 1 after 5 min, contact base for > 2 doses.  | No                                    |

| STATE                | Statewide protocol available?                                    | EMS type /<br>technician level | BZD included in the protocol?  Types, dosage and route of administration recommended?  BZD re-dosing instructions or consultation call?   | Non-BZD ASM included in the protocol? |
|----------------------|--|--------------------------------|---|---------------------------------------|
|                      | Yes  | EMT / AEMT                     | No, only assist family if RM prescribed (diazepam rectal gel); if VNS, suggest the use of VNS magnet.   | No                                    |
| Connecticut          |  | Paramedic                      | - Midazolam 5 mg/ml concentration (IM/IN preferred if not IV/IO), 0.2 mg/kg IM/IN (max 8 mg) repeat every 5 min; or 0.1 mg/kg IV/IO (max 4 mg) repeat every 5 min Lorazepam 0.1 mg/kg IV/IO (max 2 mg if ≤ 39 kg, 4 mg if >39 kg) repeat every 5 min Diazepam 0.1 mg/kg IV/IO (max 10 mg) repeat every 5 min. * Until seizure activity ceases or maximum dose is reached. | No                                    |
| Dalamana             | Yes  | BLS                            | No protocol for seizures  | No                                    |
| Delaware             |  | Paramedic                      | -Midazolam 0.2 mg/kg IM (if no IV/IO access, max 5 mg); 0.2 mg/kg IV/IO.  | No                                    |
|                      | Yes  | BLS                            | No No   | No                                    |
| District of Columbia | (district wide)  | ALS                            | -Midazolam 0.2 mg/kg IN (max 5 mg), repeat once in 5 min; 0.1 mg/kg IV/IO (max 2 mg), repeat once in 5 min.  Contact medical control for additional doses.  | No                                    |
|                      | No (Miami-   | BLS                            | No  | No                                    |
| Florida              | Dade County,<br>including<br>Miami)                              | ALS                            | -Midazolam 0.1 mg/kg IV/IO (max 5 mg); 0.2 mg/kg IM/IN (max 5 mg). May be repeated once in 5 min (max 10 mg). Medical control physician for additional administration of benzodiazepines.   | No                                    |
| Georgia              | Not available (Fulton County, containing Atlanta, not available) |                                |   |                                       |
|                      | Yes  | EMT                            | Not clearly specified, restrictions for IV ASM (specific training needed and paramedic's supervision).  | No                                    |
| Hawaii               |  | Paramedic                      | - Midazolam 2 mg IN or IM (5 mg/ml concentration), repeat dose at 2 min (1st option) Diazepam 1 mg slow IV, repeat dose at 2 min (max 10 mg); PR 0.5 mg/kg if <6 yo, 0.3 mg/kg if 6-11 yo, 0.2 mg/kg if >11 yo (max 10 mg) Lorazepam 0.1 mg/kg slow IV or IN (max 4 mg) (last option). Communicate with base station physician for further orders.                        | No                                    |
|                      | Yes  | EMT / AEMT                     | No  | No                                    |
| Idaho                |  | Paramedic                      | - Midazolam 0.1 mg/kg IV (max 5 mg); 0.2 mg/kg IM (max 5 mg); 0.2 mg/kg IN (max 10 mg) (IN/IM preferred route if no IV access) Diazepam 0.05 mg/kg IV (max 5 mg); 0.5 mg/kg PR (max 10 mg) Lorazepam 0.05 mg/kg IV/IM (max 4mg). May repeat medications x1 in 5 min.  | No                                    |
|                      | No   | BLS/EMT-B                      | No  | No                                    |
| Illinois             | (e.g. region XI,<br>Chicago)                                     | Paramedic                      | -Midazolam 0.2 mg/kg IN or 0.1 mg/kg IM (max 5 mg); 0.1 mg/kg IV/IO (< 6 y: max 6 mg) (≥ 6 y: max 10 mg)Diazepam 0.1-0.3 mg/kg IV over 2-3 min, every 5 min (< 5 y: max 5 mg) (≥ 5 y: max 10 mg)Lorazepam 0.1 mg/kg IV/IO, may repeat x1 (max 4 mg); 0.1 mg/kg IM.  | No                                    |

| STATE         | Statewide protocol available?         | EMS type /<br>technician level                | BZD included in the protocol?  Types, dosage and route of administration recommended?  BZD re-dosing instructions or consultation call?   | Non-BZD ASM included in the protocol? |
|---------------|---------------------------------------|---|---|---------------------------------------|
|               | No (e.g.                              | BLS   | No  | No                                    |
| Indiana       | Indianapolis)                         | ALS   | -Midazolam 0.1 mg/kg IV/IM/IN (max 5 mg), repeatable once in 5 min if needed.  Contact the receiving facility for further instructions or additional dosing if needed.  | No                                    |
|               | Yes                                   | Basic   | No  | No                                    |
| lowa          |                                       | Advanced                                      | -Benzodiazepine (dosage according to pediatric dosing reference), may repeat dose in 5 min if still seizing.  | No                                    |
|               | Yes (sample                           | EMT-B, EMT-I                                  | No  | No                                    |
| Kansas        | protocol)                             | Paramedic                                     | -Diazepam 0.1 mg to 0.3 mg IV slowly or PR, may repeat in 15 min. Contact medical control for further orders.   | No                                    |
|               | Yes                                   | EMT-Basic, EMT-<br>Advanced                   | No, only assist family if RM prescribed; if VNS, determine if emergency could be related.   | No                                    |
| Kentucky      |                                       | Paramedic                                     | - Lorazepam 0.1 mg/kg IV/IO (max 4 mg) Midazolam 0.1 mg/kg IV/IM/IO (max 2 mg) Diazepam 0.2 mg/kg IV or 0.5 mg/kg PR (max 5 mg or 10 mg PR). Any of the above may be repeated once in 5 min. May be repeated once in 5 min.   | No                                    |
| Louisiana     | No (e.g.<br>Region I, New<br>Orleans) | Any EMT or paramedic certified in this region | -Midazolam 0.1 mg/kg IV/IO (max 5 mg); 0.2 mg/kg IM/IN (max 5 mg).  - Diazepam 0.1 mg/kg IV/IO/IM (< 5 yo max 5 mg, ≥ 5 yo max 10 mg); 0.5 mg/kg PR.  - Lorazepam 0.1 mg/kg IV/IO/IM, may repeat x1 q 2-5 min.  *Midazolam IM first option prior IV access, last resort diazepam PR.  *EMS practitioners are under the direction of the highest skilled level practitioner and medical control.  Contact medical control for additional orders or consultation.   | No                                    |
|               | Yes                                   | EMT, EMT-A                                    | No  | No                                    |
| Maine         |                                       | Paramedic                                     | -Midazolam 0.2 mg/kg IM (max 10 mg); 0.1 mg/kg IV (max 5 mg), 0.2 mg/kg IN over 15 sec (max 6 mg).  *Midazolam IM first option if no IV access. Contact medical control if repeat dosing of midazolam needed.   | No                                    |
|               | Yes                                   | BLS   | No  | No                                    |
| Maryland      |                                       | ALS   | May assist patients with administration of their prescribed BZD.  -Midazolam 0.2 mg/kg IN/IM if no IV/IO (max 5 mg); 0.1 mg/kg IV/IO in 2 mg increments slow IVP over 1–2 min (max 5 mg). IN/IM preferred over IO (consider if seizures refractory to treatment). Additional doses of midazolam (up to max 5 mg) require medical consultation.  -Diazepam up to 0.2 mg/kg PR (max 10 mg); 0.1 mg/kg in 2.5 mg increments SLOW IVP/IO/IM (max 5 mg).  Midazolam preferred, diazepam if not midazolam available.  IM requires all providers to obtain medical consultation. | No                                    |
|               | Yes                                   | EMT, AEMT                                     | No. AEMT can assist family if RM prescribed; and if VNS, suggest the use of VNS magnet.   | No                                    |
| Massachusetts |                                       | Paramedic                                     | -Midazolam 0.1 mg/kg IV/IO/IM (max 8 mg); 0.2 mg/kg IN (max 10 mg). Contact medical control for additional doses.   | No                                    |

| STATE       | Statewide protocol available?      | EMS type /<br>technician level | BZD included in the protocol?  Types, dosage and route of administration recommended?  BZD re-dosing instructions or consultation call?   | Non-BZD ASM included in the protocol? |
|-------------|------------------------------------|--------------------------------|---|---------------------------------------|
|             | Yes                                | EMT-Basic, EMT-<br>Specialist  | No  | No                                    |
| Michigan    |                                    | Paramedic                      | -Midazolam according to MI-MEDIC cards or 0.1mg/kg IM (max 10 mg); 0.05 mg/kg IV/IO (max 5 mg)Lorazepam 0.1 mg/kg IV/IO (max 4 mg), may repeat in 5 min, max 0.2 mg/kg total (max 8 mg). *Midazolam IM first election. If seizures persist, repeat midazolam, or lorazepam at the same dose or contact medical control for further instructions.  | No                                    |
|             | Yes                                | BLS                            | No  | No                                    |
| Minnesota   |                                    | ALS                            | - Midazolam IV/IO 0.1 mg/kg IV/IO (max 10 mg), if seizure not terminated within 10 min, additional 0.05 mg/kg IV/IO; 0.2 mg/kg IM (max 10 mg), if seizure not terminated within 10 min, additional 0.05 mg/kg IM; 0.2 mg/kg IN (max 10 mg).  - Diazepam 0.1 mg/kg IV/IO/IM (max 10 mg), if seizure not terminated within 10 min, additional 0.05 mg/kg IV/IO/IM; PR 0.5 mg/kg ages 2-5 and 0.3 mg/kg ages 6-11.  - Lorazepam 0.1 mg/kg IV/IO/IM (max 4 mg), if seizure not terminated within 10 min, additional 0.05 mg/kg IV/IO/IM (max 4 mg). | No                                    |
| Mississippi | Yes<br>(NASEMSO<br>model)          | No divisions on protocol       | - Midazolam 0.2 mg/kg IM preferred, or IN (max 10 mg); 0.1 mg/kg IV or IO, max 4mg Diazepam 0.1 mg/kg IV or IO, max 4mg; 0.2 mg/kg PR, max 10 mg Lorazepam 0.1 mg/kg IV or IO, max 4mg. *IN/IM preferred over PR/IV/IO routes. Consider consultation if not trained personnel or 2 doses of BZD administered.   | No                                    |
|             | No                                 | Any EMT                        | No  | No                                    |
| Missouri    | (e.g. Kansas<br>City)              | Paramedic                      | -Midazolam 0.2 mg/kg IN (max 5mg), may repeat dose once; 0.1 mg/kg IV slow (max 5mg).  Contact medical control for further additional doses.  | No                                    |
|             | Yes                                | EMR, EMT, AEMT                 | No  | No                                    |
| Montana     |                                    | AEMT with 199<br>Paramedic     | - Midazolam 0.2 mg/kg (IV/IM/IN) (max 5 mg) Diazepam 0.3 mg/kg (IV/ET/IO/PR) (max 10 mg) Lorazepam 0.05 mg/kg (IV/IO/IM) (max 4 mg).  | No                                    |
|             | Yes                                | EMR, EMT, AEMT                 | No  | No                                    |
|             |                                    | EMT-I                          | -Diazepam 0.04 to 0.2 mg/kg (max) IV/IO/PR, may repeat to max 10 mg.  | No                                    |
| Nebraska    |                                    | Paramedic                      | -Diazepam 0.04 to 0.2 mg/kg (max) IV/IO/PR, may repeat to max 10 mgLorazepam 0.05 mg/kg IV/IO/MAD, may repeatMidazolam 0.1 mg/kg IV/IO/IM/MAD, may repeat 0.1 mg/kg. * Maximum dose not exceed adult dose.  | No                                    |
|             | No (e.g. Clark                     | EMT, AEMT                      | No  | No                                    |
| Nevada      | County,<br>including Las<br>Vegas) | Paramedic                      | -Midazolam 0.1 mg/kg, IN/IM/IV/IO (max 5 mg)Diazepam 0.1 mg/kg IM/IV/IO/PR (max 5 mg)May repeat if status or recurrent seizures.  | No                                    |

| STATE            | Statewide protocol available? | EMS type /<br>technician level                              | BZD included in the protocol?  Types, dosage and route of administration recommended?  BZD re-dosing instructions or consultation call?  | Non-BZD ASM included in the protocol? |
|------------------|-------------------------------|---|--|---------------------------------------|
|                  | Yes                           | EMT, AEMT   | No, only assist family if RM prescribed; if VNS, suggest the use of VNS magnet.  | No                                    |
| New<br>Hampshire |                               | Paramedic   | - Midazolam 5 mg/ml concentration (IM/IN preferred if not IV), 0.2 mg/kg IM/IN (max 8 mg) repeat every 5 min; or 0.1 mg/kg IV (max 4 mg) repeat every 5 min.  - Lorazepam 0.1 mg/kg IV (max 4 mg), repeat every 5 min.  - Diazepam 0.1 mg/kg IV (max 10 mg) repeat every 5 min.  * Diazepam and lorazepam are not well absorbed IM and should be given IV. | No                                    |
|                  | Yes                           | BLS   | No   | No                                    |
| New Jersey       |                               | ALS   | - Diazepam 0.1 mg/kg IV (max 5 mg); may PR if not IV (same IV dose) Lorazepam 0.05 mg/kg IV (max 2 mg); 0.05 mg/kg (max 2 mg) through an approved route of administration Midazolam 0.15 mg/kg (max 5 mg) through an approved route of administration.   | No                                    |
| New Mexico       | Yes                           | EMS first<br>responder, EMT-<br>basic, EMT-<br>intermediate | No   | No                                    |
|                  |                               | Paramedic   | - Midazolam 0.2 mg/kg IN/IM (max 5 mg), may repeat once after 10 min; 0.1 mg/kg IV slow/IO, repeat every 5 min as needed (max 10 mg) Diazepam 0.05–0.1 mg/kg IV/IO. * Buccal, IN, or IM routes are preferred as first line. PR not recommended.  | No                                    |
|                  | Yes                           | BLS, EMT, AEMT  | No, may assist family with rectal diazepam.  | No                                    |
| New York         |                               | EMT-critical care   | -Midazolam 0.1 mg/kg IM/IN (max 5 mg). Medical control for additional doses.   | No                                    |
|                  |                               | Paramedic   | -Midazolam 0.1 mg/kg IV/IM/IN (max 5 mg). Medical control for additional doses.  | No                                    |
|                  | Yes                           | EMR, EMT, AEMT  | No   | No                                    |
| North Carolina   |                               | Paramedic   | - Midazolam 0.1 – 0.2 mg/kg IV/IO/IM/IN, may repeat every 3 to 5 min (max 10 mg) Diazepam 0.1 – 0.3 mg/kg IV/IO/IM; 0.5 mg/kg PR; repeat 2 mg every 3 to 5 min (max 10 mg). *Do not delay IM with difficult IV/IO access. Notify destination or contact medical control.   | No                                    |
|                  | Yes                           | EMT, AEMT   | No   | No                                    |
| North Dakota     |                               | Paramedic   | - Midazolam IV/IO/IN, may repeat in 5 min Lorazepam IV/IO/IN, may repeat in 5-10 min Diazepam IV/IO, may repeat in 5-10 min. *Use weight/length-based system for pediatric patients.   | No                                    |
|                  | Yes                           | EMR, EMT  | No   | No                                    |
|                  |                               | AEMT  | - Diazepam 0.2 mg/kg, slow IV push over 3 min (max 5 mg); if no IV, 0.5 mg/kg PR (max 10 mg).  | No                                    |
| Ohio             |                               | Paramedic   | - Midazolam 0.1 mg/kg IM Diazepam 0.2 mg/kg, slow IV push over 3 min (max 5 mg); if no IV, 0.5 mg/kg PR (max 10 mg).   | No                                    |

| STATE        | Statewide protocol available?                  | EMS type /<br>technician level | BZD included in the protocol?  Types, dosage and route of administration recommended?  BZD re-dosing instructions or consultation call?  | Non-BZD ASM included in the protocol?  |
|--------------|--|--------------------------------|--|--|
|              | Yes  | EMR, EMT, EMT-<br>I85, AEMT    | No   | No   |
| Oklahoma     |  | Paramedic                      | - Midazolam 0.1 mg/kg IM/IVP/IN/IOP (max 5 mg), may repeat once in 5 min Diazepam 0.1 mg/kg (max 5 mg) IVP/IOP/IM, may repeat once in 5 min Lorazepam 0.1 mg/kg (max 2 mg) IVP/IOP/IM, may repeat once in 10 min. *Midazolam preferred option.   | No   |
|              | No<br>(e.g.                                    | EMR, EMT, AEMT,<br>EMT-I       | No   | No   |
| Oregon       | Multnomah<br>County,<br>including<br>Portland) | Paramedic                      | -Midazolam 0.3 mg/kg IM/IN (max 5 mg), may repeat every 3-5 min (max 10 mg). If still seizing, obtain IV/IO access, administer midazolam 0.1 mg/kg IV/IO every 3-5 min (max 15 mg IV/IO). If IV/IO is available, midazolam 0.1 mg/kg IV/IO (max 5 mg) every 3-5 min (max 25 mg IV/IO).  * Total dose of midazolam, regardless of route (IM, IN, IV, IO) is 25 mg. If still seizing, contact medical control for possible midazolam drip. | No   |
|              | Yes  | BLS                            | No   | No   |
| Pennsylvania |  | ALS                            | -Lorazepam 0.1 mg/kg IV/IO/IN (max 2 mg), may repeat every 5 min (max 4 mg)Diazepam 0.3 mg/kg IV/IO (max 5 mg); 0.5 mg/kg PR (max 10 mg); may repeat every 5 min (max 0.6 mg/kg)Midazolam 0.15 mg/kg IM; 0.1 mg/kg IV/IO/IN (max 2 mg); may repeat every 5 min (max 0.2 mg/kg IV). Titrate until seizure stops. Contact medical command.   | No   |
|              | Yes  | EMT                            | No, only assist family if RM prescribed; if VNS, suggest the use of VNS magnet.  | No   |
|              |  | AEMT-Cardiac practitioner      | - Midazolam 0.2 mg/kg IM/IN (max 4 mg); 0.1 mg/kg IV (max 4 mg); may repeat every 5 min (max of 1 mg/kg) Lorazepam 0.1 mg/kg IV (max 4 mg), may repeat every 5 min (max 0.5 mg/kg) Diazepam 0.1 mg/kg IV (max 5 mg); 0.5 mg/kg PR (max 20 mg); may repeat every 5 min (max 1 mg/kg).   | No   |
| Rhode Island |  | Paramedic                      | - Midazolam 0.2 mg/kg IM/IN (max 4 mg); 0.1 mg/kg IV (max 4 mg); may repeat every 5 min (max of 1 mg/kg).  - Lorazepam 0.1 mg/kg IV (max 4 mg), may repeat every 5 min (max 0.5 mg/kg).  - Diazepam 0.1 mg/kg IV (max 5 mg); 0.5 mg/kg PR (max 20 mg); may repeat every 5 min (max 1 mg/kg).  *IM/IN route preferred if no immediate IV access.  *Lorazepam first option if IV/IO access.  *Diazepam least desirable choice.             | Phenobarbital 20 mg/kg IV, rate < 50 mg/min, may repeat 5 mg/kg IV every 5 min until seizure activity is terminated.  -Levetiracetam 20 mg/kg IV over 15 min, may repeat once. |

| STATE          | Statewide protocol available?   | EMS type /<br>technician level | BZD included in the protocol?  Types, dosage and route of administration recommended?  BZD re-dosing instructions or consultation call?   | Non-BZD ASM included in the protocol? |
|----------------|---|--------------------------------|---|---------------------------------------|
|                | Yes   | EMR, EMT, AEMT<br>Paramedic    | No -Benzodiazepines, may repeat once after 5 min. Local medical control will assign dosage,   | No<br>No                              |
| South Carolina |   | raramedic                      | route, etc.  * Addressing the ABCs and verifying blood glucose is more important than stopping the seizure. Rectal diazepam/lorazepam: Draw drug dose up in a 3 ml syringe. Remove needle and attached syringe to an IV extension tube. Insert tube in rectum and inject drug. Flush with 3 ml of air and remove.  Contact medical control if still seizing.  | 140                                   |
| South Dakota   | Not available (Minnehaha County, including Sioux Falls, not available; Hughes County, containing Pierre, not available) |                                |   |                                       |
| Tennessee      | Yes   | EMR, EMT, AEMT Paramedic       | No  -Diazepam 0.1 mg/kg IV/IOMidazolam 0.1 mg/kg IV/IO; 0.2 mg/kg IM (max 6 mg), may repeat once after 10 minutes, contact medical control if seizure activity persists after repeat dose; 0.3 mg/kg IN (max 10 mg), max total 0.4 mg/kgLorazepam 0.1 mg/kg IV/IO (max 4 mg), may repeat in 5 min; not to exceed 0.2 mg/kg total (max 8 mg).  * If seizure persists for 4 min repeat medication once.   | No<br>No                              |
|                | No (e.g. city of  | BLS                            | No  | No                                    |
| Texas          | Houston)  | ALS                            | -Midazolam IN/IM per pediatric dosing. If seizure continues > 5 min after initial dose, midazolam IN/IM/IV/IO per pediatric dosing. Further orders as per on-line physician. Dosing: 0.1 mg/kg IV/IO and 0.2 mg/kg IN/IM; careful titration for repeat dosages, not exceeding 2 mg per dose; maximum cumulative dose of 4 mg without on-line physician approval.  * Midazolam should be given IM (or IN in pediatric patients) prior to an IV attempt. Midazolam shall only be given initially IV or IO if the patient has a pre-existing IV or IO immediately available. | No                                    |

| es<br>o (e.g.   | EMT AEMT, paramedic  EMT, AEMT  Paramedic                   | No  -Midazolam 0.3 mg/kg IN (max 5 mg), may repeat once in 5 min (max 10 mg); 0.15 mg/kg IM (max 5 mg), may repeat once in 10 min (max 10 mg); 0.1 mg/kg IV/IO (max 5 mg), may repeat once in 5 min (max 10 mg).  -Diazepam 0.1 mg/kg (max 5 mg) IV/IO, may repeat every 5 min (max10 mg); 0.2 mg/kg IM (max 10 mg), may repeat every 10 min (max 20 mg) (IM not preferred unless no other options).  -Lorazepam 0.1mg/kg IV/IO/IM (max 2 mg), may repeat every 5 min (max 4 mg).  Contact medical control for dosages above those provided or use of medication not fitting the guideline parameters.  No, only assist family if RM prescribed (diazepam rectal gel, intranasal midazolam; if VNS, suggest the use of VNS magnet.  -Midazolam 0.2 mg/kg IM (preferred) or IN (max 10 mg, and 5mg/ml concentration recommended for IM/IN administration); 0.1 mg/kg IV (max 4 mg).  -Lorazepam 0.1 mg/kg IV (max 4 mg).  -Diazepam 0.1 mg/kg IV (max 10 mg).  Any of the above may be repeated once after 5 min. Contact medical direction for additional dosing. Preferred initial dose is midazolam IM/IN. If IV established, administer IV. | No<br>No<br>No |
|---|---|--|----------------|
| es<br>-<br>o (e.g.  | EMT, AEMT Paramedic   | (max 5 mg), may repeat once in 10 min (max 10 mg); 0.1 mg/kg IV/IO (max 5 mg), may repeat once in 5 min (max 10 mg).  -Diazepam 0.1 mg/kg (max 5 mg) IV/IO, may repeat every 5 min (max10 mg); 0.2 mg/kg IM (max 10 mg), may repeat every 10 min (max 20 mg) (IM not preferred unless no other options).  -Lorazepam 0.1mg/kg IV/IO/IM (max 2 mg), may repeat every 5 min (max 4 mg).  Contact medical control for dosages above those provided or use of medication not fitting the guideline parameters.  No, only assist family if RM prescribed (diazepam rectal gel, intranasal midazolam; if VNS, suggest the use of VNS magnet.  -Midazolam 0.2 mg/kg IM (preferred) or IN (max 10 mg, and 5mg/ml concentration recommended for IM/IN administration); 0.1 mg/kg IV (max 4 mg).  -Lorazepam 0.1 mg/kg IV (max 4 mg).  -Diazepam 0.1 mg/kg IV (max 10 mg).  Any of the above may be repeated once after 5 min. Contact medical direction for additional dosing. Preferred initial dose is midazolam IM/IN. If IV established, administer IV.   | No<br>No       |
| o (e.g  | Paramedic   | suggest the use of VNS magnet.  -Midazolam 0.2 mg/kg IM (preferred) or IN (max 10 mg, and 5mg/ml concentration recommended for IM/IN administration); 0.1 mg/kg IV (max 4 mg)Lorazepam 0.1 mg/kg IV (max 4 mg)Diazepam 0.1 mg/kg IV (max 10 mg). Any of the above may be repeated once after 5 min. Contact medical direction for additional dosing. Preferred initial dose is midazolam IM/IN. If IV established, administer IV.  | No             |
| o (e.g  |   | recommended for IM/IN administration); 0.1 mg/kg IV (max 4 mg)Lorazepam 0.1 mg/kg IV (max 4 mg)Diazepam 0.1 mg/kg IV (max 10 mg). Any of the above may be repeated once after 5 min. Contact medical direction for additional dosing. Preferred initial dose is midazolam IM/IN. If IV established, administer IV.   |                |
| ` ` ` _   | EMT. AEMT   | No   | N1-            |
|   | ,   | 1.15   | No             |
|   | Intermediate<br>Paramedic                                   | -Midazolam 0.2 mg/kg IN equally divided in each nostril (max 5 mg) (midazolam IN preferred drug); 0.1 mg/kg slow IV/IM push over 1 min (max 2.5 mg) (IM if not IV access, may be just as good, if not better, than lorazepam IV) (midazolam IV/IM as 2nd option after midazolam IN)Lorazepam 0.1 mg/kg IV/IO (max 2 mg), slow IV push, over 2 min (may be administered IM if no IV/IO access). May repeat with physician order (max 8 mg). *IO placement is the last resort.   | No             |
|   |   | No   | No             |
| cluding eattle, not vailable; g.Thurston ounty, cluding lympia) |   | -Midazolam 0.1 mg/kg IV, may repeat q 3 min (max 5 mg); 0.2 mg/kg IM/IN, may repeat q 3 min (max 10 mg).   |                |
| es  | BLS   | No   | No             |
|   | Paramedic<br>Advanced Care<br>Technician                    | If patient has prescription of rectal diazepam, administer it and contact medical commandMidazolam IV/IO/IM 0.1 mg/kg (max 5 mg); if no IV, 0.2 mg/kg IN via atomizer (max 5 mg). The administration requires medical control physician order. Further treatment as ordered by medical command.  | No             |
| ol<br>cl<br>ea<br>ya<br>g<br>ol<br>cl                           | unty, uding attle, not allable; .Thurston unty, uding mpia) | unty, uding attle, not ailable; .Thurston unty, uding mpia)  BLS Paramedic Advanced Care   | S              |

| STATE     | Statewide<br>protocol<br>available?                                | EMS type /<br>technician level | BZD included in the protocol?  Types, dosage and route of administration recommended?  BZD re-dosing instructions or consultation call?   | Non-BZD ASM included in the protocol? |
|-----------|--|--------------------------------|---|---------------------------------------|
|           | Yes  | EMR, EMT, AEMT                 | No  | No                                    |
| Wisconsin |  | Intermediate                   | -Midazolam 0.1-0.2 mg/kg IN/IM (max 10 mg) (should be 5mg/ml concentration), may repeat in 5 min; 0.1-0.2 mg/kg IV (max 10 mg), may repeat in 5 minDiazepam rectal 0.5 mg/kg <6 y/o, 0.3 mg/kg 6-11 y/o, 0.2 mg/kg > 11y/o, may repeat in 10 min, for continued seizure 0.2 mg/kg/doseLorazepam 0.05-0.1 mg/kg/dose (max 2 mg). If no IV/IO access, administer midazolam IN/IM or rectal diazepam. Intermediate agencies may have only one benzodiazepine on formulary. | No                                    |
|           |  | Paramedic                      | Same than intermediate level plus alternative benzodiazepines. Contact medical control for persistent seizures.   | No                                    |
| Wyoming   | No (Laramie<br>County,<br>including<br>Cheyenne, not<br>available) |                                |   | No                                    |

**Legend:** BLS: Basic Life Support providers, ALS: Advanced Life Support providers, EMT: Emergency Medical Technician, AEMT: Advanced Emergency Medical Technician, EMT-I: Intermediate, EMR: Emergency Medical Responder, IM: intramuscular, IV: intravenous, IN: intranasal, IO: intraosseous, PR: per rectum, MAD: mucosal atomization device, RM: rescue medication, NASEMSO: National Association of State EMS Officials, BZD: benzodiazepines, ASM: anti-seizure medication, VNS: vagus nerve stimulation, ET: endotracheal.

## LINKS TO THE PROTOCOLS:

 $ALABAMA: \underline{http://www.alabamapublichealth.gov/ems/assets/9thEditionProtocolsFinal.pdf}$ 

 $ALASKA: \underline{https://nasemso.org/wp-content/uploads/National-Model-EMS-Clinical-Guidelines-2017-PDF-Version-2.2.pdf}$ 

ARIZONA: <a href="https://www.azdhs.gov/preparedness/emergency-medical-services-trauma-system/index.php#community-paramedicine-home">https://www.azdhs.gov/preparedness/emergency-medical-services-trauma-system/index.php#community-paramedicine-home</a>

ARKANSAS: https://www.healthy.arkansas.gov/images/uploads/pdf/EMS National Guidelines 2017.pdf

CALIFORNIA: Los Angeles County <a href="http://file.lacounty.gov/SDSInter/dhs/1040482\_1231-PSeizure2018-04-29.pdf">http://file.lacounty.gov/SDSInter/dhs/1040482\_1231-PSeizure2018-04-29.pdf</a>

COLORADO: Denver metropolitan area http://www.dmemsmd.org/sites/default/files/DMEMSMD-Protocols-2019-7-Linked.pdf

CONNECTICUT: <a href="https://portal.ct.gov/-/media/Departments-and-department

<u>Agencies/DPH/dph/ems/pdf/statewide\_protocols/V20191ProtocolsFINALNOSEC2EpiAdd.pdf?la=en\_logon\_l</u>

DELAWARE: https://statefireschool.delaware.gov/wp-content/uploads/sites/114/2018/10/2018-BLS-Standing-Orders.pdf and

https://www.dhss.delaware.gov/dph/ems/files/paramedicstandingorders2018.pdf

DISTRICT OF COLUMBIA:

https://fems.dc.gov/sites/default/files/dc/sites/fems/publication/attachments/DC%20FEMS%202017%20Protocol%20Update%20-

%20April%201%2C%202019%20Part%201.pdf

FLORIDA: Miami-Dade County https://mdsceh.miamidade.gov/mobi/moms/protocol%2016p.pdf

GEORGIA: Not available.

HAWAII: https://health.hawaii.gov/ems/files/2018/09/SO2018.pdf

IDAHO: <a href="http://healthandwelfare.idaho.gov/Portals/0/Medical/EMS/EMSPC/EMSPCProtocols2017ProceduresFINAL.pdf">http://healthandwelfare.idaho.gov/Portals/0/Medical/EMS/EMSPC/EMSPCProtocols2017ProceduresFINAL.pdf</a>

ILLINOIS: Chicago, paramedics https://chicagoems.org/wp-content/uploads/2019/01/ALS-SMO-MDC\_APPROVED.pdf; BLS

https://chicagoems.org/wp-content/uploads/2019/01/BLS-SMO-MDC\_APPROVED.pdf

INDIANA: Indianapolis http://protocols.indianapolisems.org/medical.html#parentVerticalTab11

IOWA: https://idph.iowa.gov/Portals/1/userfiles/179/2018%20Protocols%20FINAL-TOC%20update.pdf

KANSAS: <a href="http://www.ksbems.org/ems/?page\_id=468">http://www.ksbems.org/ems/?page\_id=468</a>

KENTUCKY: <a href="https://kbems.kctcs.edu/media/medical-direction/Kentucky%20State%20Protocols%20COMPLETE%204.18%20UPDATE.PDF">https://kbems.kctcs.edu/media/medical-direction/Kentucky%20State%20Protocols%20COMPLETE%204.18%20UPDATE.PDF</a>

LOUISIANA: New Orleans <a href="https://www.nola.gov/ems/documents/rope-\_march\_2018/">https://www.nola.gov/ems/documents/rope-\_march\_2018/</a>

MAINE: https://www.maine.gov/ems/documents/2018\_Protocol.pdf

MARYLAND: http://www.miemss.org/home/Portals/0/Docs/Guidelines\_Protocols/MD-Medical-Protocols-2019.pdf?ver=2019-04-18-095706-647

MASSACHUSETTS: https://www.mass.gov/files/documents/2019/08/06/emergency-medical-services-pre-hospital-treatment-protocols-version-

2019-2-effective-100119.pdf

MICHIGAN: https://www.michigan.gov/documents/mdhhs/Section\_4\_Obstetrics\_and\_Pediatrics\_613176\_7.pdf

MINNESOTA: BLS https://mn.gov/emsrb/assets/2013BLSPedsguidelines\_tcm1116-366187.pdf; ALS

https://mn.gov/emsrb/assets/2013ALSPedsguidelines\_tcm1116-366186.pdf

MISSISSIPPI: https://msdh.ms.gov/msdhsite/\_static/47,19055,305,382.html

MISSOURI: Kansas City <a href="https://www.kcmo.gov/home/showdocument?id=3348">https://www.kcmo.gov/home/showdocument?id=3348</a>

MONTANA: <a href="http://boards.bsd.dli.mt.gov/Portals/133/Documents/med/ecp/MT%20protocol%20V%2011%203%202019.pdf">http://boards.bsd.dli.mt.gov/Portals/133/Documents/med/ecp/MT%20protocol%20V%2011%203%202019.pdf</a>?ver=2019-03-06-

104644-380

NEBRASKA: http://dhhs.ne.gov/OEHS%20Program%20Documents/EMS%20Model%20Protocols.pdf

NEVADA: Clark County, Las Vegas http://media.southernnevadahealthdistrict.org/download/ems/2019/20190701-July-One-Protocol.pdf

NEW HAMPSHIRE: <a href="https://www.nh.gov/safety/divisions/fstems/ems/advlifesup/documents/patientprotocols7.1.pdf">https://www.nh.gov/safety/divisions/fstems/ems/advlifesup/documents/patientprotocols7.1.pdf</a>

NEW JERSEY: https://njems.njlincs.net/cdr/docs/NJEMS FieldGuide PDF.pdf

NEW MEXICO: https://nmhealth.org/publication/view/policy/1892/

NEW YORK: BLS https://www.health.ny.gov/professionals/ems/docs/bls\_protocols.pdf; ALS

https://www.health.ny.gov/professionals/ems/docs/collaborative protocols.pdf

NORTH CAROLINA: <a href="https://www.ncems.org/protocols/allprotocols.pdf">https://www.ncems.org/protocols/allprotocols.pdf</a>

NORTH DAKOTA: https://www.health.nd.gov/epr/emergency-medical-systems/emergency-medical-services-system/ems-protocols/

OHIO: https://www.ems.ohio.gov/links/ems\_Pediatric-Guidelines-Procedures-Manual.pdf

OKLAHOMA: https://www.ok.gov/health2/documents/2018%20State%20Protocols%20with%20references%204-18-2018.pdf

OREGON: Multnomah County, including Portland <a href="https://multco.us/health/providers/emts-paramedics">https://multco.us/health/providers/emts-paramedics</a>

PENNSYLVANIA: ALS https://www.health.pa.gov/topics/Documents/EMS/2019%20PA%20ALS%20Protocols%20Final.pdf, BLS

https://www.health.pa.gov/topics/Documents/EMS/2019%20PA%20BLS%20Protocols%20Final.pdf

RHODE ISLAND: http://www.health.ri.gov/publications/protocols/StatewideEmergencyMedicalServices.pdf

SOUTH CAROLINA: <a href="https://www.scemsportal.org/sites/default/files/2017%20State%20Protocols%20and%20Formulary%209-12-2019.pdf">https://www.scemsportal.org/sites/default/files/2017%20State%20Protocols%20and%20Formulary%209-12-2019.pdf</a>

SOUTH DAKOTA: Not available.

TENNESSEE: https://www.tn.gov/content/dam/tn/health/events/7.7.18PDF%20TN%20EMS%20Protocol%20Guidelines%20-

%20Mar2018%20(Rev7.7.18).pdf

TEXAS: City of Houston <a href="https://www.hfdmd.org/HFDProtocols2019.pdf">https://www.hfdmd.org/HFDProtocols2019.pdf</a>

UTAH: <a href="https://bemsp.utah.gov/bemsp/wp-content/uploads/sites/34/2018/07/2017\_utah\_ems\_medical\_guidelines-4.pdf">https://bemsp.utah.gov/bemsp/wp-content/uploads/sites/34/2018/07/2017\_utah\_ems\_medical\_guidelines-4.pdf</a>

VERMONT: <a href="http://www.healthvermont.gov/sites/default/files/DEPRIP.Protocols%202018%20FINAL%20June%208.pdf">http://www.healthvermont.gov/sites/default/files/DEPRIP.Protocols%202018%20FINAL%20June%208.pdf</a>

VIRGINIA: Virginia Beach, part of Tidewater EMS regional council

http://tidewaterems.org/update/2017%2010%2002%20Tidewater%20EMS%20Regional%20Medical%20Protocols%20with%20Appendixes.pdf

WASHINGTON: King County, including Seattle, not available. Thurston County, including Olympia

https://www.thurstoncountywa.gov/m1/m1documents/Thurston%20County%20EMS%20Field%20Protocols.pdf

WEST VIRGINIA: BLS <a href="https://www.wvoems.org/media/371134/combined%20emt%20protocols.pdf">https://www.wvoems.org/media/371134/combined%20emt%20protocols.pdf</a>, paramedic

https://www.wvoems.org/media/371130/combined%20paramedic%20protocols.pdf, ACT

https://www.wvoems.org/media/371138/combined%20act%20protocols.pdf

WISCONSIN: https://www.dhs.wisconsin.gov/ems/treatment.htm

WYOMING: Not available.