APRN Conference 2017: Health and the School-aged Child

Objectives / Content

1. Be able to identify exclusion criteria for infectious conditions specified on the School and Childcare Exclusion List, including for which conditions medical notes are required.
   - School and Childcare Exclusion List, Provider and parent versions.
   - Review of conditions requiring medical note for readmission to school.

2. Be able to identify resources for collaborating with school health personnel in management of chronic conditions like diabetes, asthma, seizure disorders, as well as intermittent conditions such as migraines and menstrual pain.
   - Management plans for chronic conditions published by the National Association of School Nurses
   - Policy Statements from American Academy of Pediatrics on management of selected chronic conditions in the school setting

3. Describe the state laws and district policies for use of controlled substances in schools when used for management of specified conditions (pharm content, controlled substances content).
   - S.C. Board of Nursing statements on OTC Medications in Schools, Medication Administration in the School Setting
   - S.C. Department of Education Statements on Medication Administration, Student Self-Medication and Self-Monitoring, Individual Health Plans
   - Sample District Prescription and Non-prescription medication forms

4. Have a familiarity with common parental requests for administration of off-label/non-FDA-approved medications/non-FDA-approved indications/other substances in the school setting (pharm content, controlled substances content)
   - Common parent questions regarding cannabis oil, nasal midazolam, herbal/dietary supplements, and essential oils.
   - Pharmacological information on selected medications.
   - Current guidance provided by S.C. Board of Nursing to school nurses on these substances.
Objective 1: School and Childcare Exclusion

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Health Care School and Childcare Exclusion List

Official School and Child Care Exclusion List of Contagious or Communicable Diseases


Parent Brochures in English and Spanish
Objective 1: School and Childcare Exclusion

School and Childcare Exclusion List
Official School and Childcare Exclusion List of Contagious or Communicable Diseases

Statutory authority: SC Code of Laws Sections 44-1-140, 44-29-200; 63-13-180
SC Code of Regulations Chapter 61-20 and Chapter 114, Article 5

Requirements

South Carolina law requires schools to take measures to prevent the spread of disease in the school and childcare populations by limiting the attendance of students and staff with contagious or infectious diseases at school and school activities. SC Regulation #01-20 requires DHEC to publish in January of each year an Official School and Childcare Exclusion List of Contagious and Communicable Diseases, hereinafter referred to as the School and Childcare Exclusion List.

SC Law indicates that schools “on account of the prevalence of any contagious or infectious diseases or to prevent the spread of disease, may prohibit or limit the attendance of any employee or student at any school or school-related activities under its control.” SC Regulation states that schools, out-of-home childcare providers, and parents/guardians should not allow the attendance of children with “any contagious or infectious disease or syndrome requiring isolation” … “if the disease or syndrome of the child or minor is on the Official School and Childcare Exclusion List of Contagious and Communicable Diseases.”

Students, employees and staff (including volunteers) are also excluded from school or childcare attendance if they have been exposed to one or more of the conditions designated in these lists, until the return to school or childcare criteria are met.

2017 Updates

The following updates were made to the School and Childcare Exclusion Lists: Chicken Pox (Varicella) is declared an outbreak with the third reported case. Added to Diarrhea (E. coli 0157:H7 and other Shiga Toxin-producing E. coli (STEC)) and Diarrhea (Shigella) that a culture-independent diagnostic test(s) can be used for exclusion. TB (Tuberculosis) includes the symptoms for suspected or confirmed cases.

This update to the School and Childcare Exclusion List is effective

Key points for Exclusion Lists

- **May not attend** – isolation required or on communicable diseases exclusion list.
- S.C. Regulation states that schools, out-of-home childcare providers, and parents/guardians should not allow the attendance of children with “any contagious or infectious disease or syndrome requiring isolation” … “if the disease or syndrome of the child or minor is on the Official School and Childcare Exclusion List of Contagious and Communicable Diseases.”

Exclusion List Applies to

- Out-of-home childcare (as defined in S.C. Code Ann. Section 63-13-20), and in any public, private, parochial, church or Sunday school (Reg 61-20).
- Children and staff in out-of-home childcare settings;
- Preschool/kindergarten students in grades 3K, 4K, and 5K;
- Students in grades 1-12; and
- School employees and staff (including volunteers) who have contact with students.
Exclusion Concepts

- **Return to School**
  - Students, children, and staff may return to the school as soon as their symptoms are resolved, unless stated otherwise in the Exclusion List or by their health care provider.

- **Period of Exclusion**
  - If a student does not respond to treatment for an excludable condition, the health care provider or health department may suggest longer periods of exclusion.

- **Notes / Documentation for Return**
  - A student may return to school as indicated in the tables that follow. Physicians, nurse practitioners, physician assistants, or DHEC physician staff may provide medical notes for return to school following an excludable condition. Medical notes, which document diagnosis, initiation of treatment, improvement in status, etc., and parent notes should be kept on file at the school for at least one calendar year, or as otherwise required by local school district policy. Medical notes may not shorten or abrogate the minimum period of exclusion required by DHEC for any specific condition.

- **Outbreaks**
  - During disease outbreaks or under special circumstances, DHEC may change the length of the exclusion periods. During outbreaks, exclusion criteria may also apply to students, children and staff who display the same symptoms as lab-confirmed cases, even if the child has not been tested for the illness causing the outbreak.

Excludable Conditions requiring a medical note to return

1. **Chicken Pox (varicella)**
   - In outbreaks (3 cases in six weeks in a common setting such as a school, childcare, community, or institutional setting), exclude unimmunized student with not history of varicella vaccination from the start of the outbreak (or the day it is first recognized) until day 21 after the onset of rash in the last person diagnosed with varicella in the affected setting.
   - Student and staff may return immediately after receipt of varicella vaccine.
   - Pregnant students and staff should not receive varicella vaccine.
   - Students and staff with vaccine exemptions should be excluded until it is safe for them to return.

2. **Diarrhea caused by E. coli O157:H7 and other Shiga Toxin-producing E. coli (STEC)**
   - Condition remains contagious 3 weeks or longer
   - Children and staff in out-of-home childcare or students in kindergarten:
   - May return with diarrheal symptoms resolved for at least 24 hours AND Medical documentation of 2 consecutive stool cultures or culture-independent diagnostic tests taken at least 24 hours apart are negative for STEC.
   - If antibiotics are prescribed, stool cultures must be collected 48 or more hours after the antibiotics were completed.
Objective 1: School and Childcare Exclusion

- Older students are excluded until diarrheal symptoms are resolved for at least 24 hours. They should avoid water activities for at least 2 weeks after diarrheal symptoms resolve.

**Note on culture-independent diagnostic tests:**
- These are primarily PCR and EIA tests.
- Many hospitals and providers order these for most GI bugs. BD Max and Diatherix are examples.
- One caveat:
  - PCR testing can be overly sensitive. It can detect the DNA of a pathogen that is no longer viable. If a child is symptom-free and continues to test positive on a PCR device, switch to culture. If your practice uses a firm such as Diatherix that does not perform cultures, DHEC can do the culture testing at the BoL.

3. **Diarrhea cause by *Salmonella Typhi* (Typhoid fever)**
   - Infection may persist in stool for up to 12 weeks; chronic carriage is possible
   - All students/staff:
     - Exclude until diarrheal symptoms are resolved for at least 24 hours AND three stool cultures collected at 24-hour intervals are negative for *Salmonella Typhi*.
     - If antibiotics are prescribed, stool cultures must be collected 48 or more hours after the antibiotics were completed.

4. **Diarrhea caused by *Shigella***
   - Untreated, *Shigella* is found in the stool for up to 4 weeks.
   - Children or staff in out-of-Home childcare or staff in kindergarten:
     - Exclude until diarrheal symptoms are resolved for at least 24 hours and at least 1 stool culture or culture-independent diagnostic test is negative for *Shigella*.
     - If antibiotics are prescribed, stool cultures must be collected 48 or more hours after the antibiotics were completed.
   - Older students:
     - Exclude until diarrhea has stopped for at least 24 hours, provided that the student has good hand hygiene and the ability to self-toilet.
     - A student with questionable or poor hand hygiene may be required to have at least one *Shigella*-negative stool culture and to be diarrhea free for at least 24 hours prior to returning to school. If antibiotics are prescribed, stool cultures must be collected 48 or more hours after the antibiotics were completed.

5. ***Haemophilus influenzae* type B (Hib)**
   - Contagious via respiratory route.
   - This is not suspected H. flu ear infections.
   - May return with a medical note documenting completion of antibiotic therapy and clearance to return to school.
6. **Hepatitis A virus infection**
   - Most infectious in the 2 weeks before symptom onset. The risk is minimal after the onset of jaundice.
   - Exclude until 1 week after onset of illness or jaundice.
   - Refer contacts to their healthcare provider for consideration of immunoglobulin or vaccine in consultation with the health department.
   - Asymptomatic contacts are not excluded.

7. **Rubeola (red measles, 10-day measles, hard measles)**
   - Contagious 1-2 days before signs and symptoms appear until 4 days after rash onset.
   - Exclude until 4 days after onset of rash, and cleared by a healthcare provider.
   - Medical note should indicate 4 days since onset of illness, verify diagnosis (or febrile rash illness in a known contact to a measles case), child has recovered sufficiently to return to school.
   - For ANY Measles Case in a school or childcare: Exposed students who have not received measles-containing vaccine, and staff born in or after 1957 who cannot provide documentation of 2 doses of measles vaccine on or after the first birthday, are excluded until 21 days after onset of rash in the last case in the affected school or community. These persons may be readmitted immediately after receiving measles vaccine (if given within 72 hours of exposure) or measles immunoglobulin (if given within 6 days of exposure.)
   - DHEC and CDC will provide guidance on readmission of previously unprotected persons who receive vaccine or immunoglobulin outside of these time frames, and on children ages 6-11 months who are exposed to measles.
   - Pregnant students and staff should not receive MMR immunization.

8. **Bacterial Meningitis (known or suspected)**
   - *Neisseria meningitides, Haemophilus influenzae, Streptococcus pneumoniae*
   - Contagious via respiratory secretions until after 24 hours of antibiotics.
   - Child is excluded as soon as meningitis is suspected, until cleared by a healthcare provider.
   - Medical note indicates diagnosis (culture, positive LP results, other clinical findings leading to empiric diagnosis); infected person is no longer contagious.
   - Close contacts to *N. meningococcal disease* are excluded until appropriate antimicrobial treatment has been initiated – medical documentation is required.

9. **Meningitis – Viral (or other non-bacterial) (known or suspected)**
   - Shedding of virus in feces can continue for several weeks, or in the respiratory tract for a week or less.
   - Exclude as soon as meningitis is suspected and until bacterial meningitis is ruled out.
   - Medical note should indicate that the person is non-contagious.

10. **Mumps (Rubulavirus)**
    - Contagious 1-2 days before and up to 5 days after the onset of parotid gland swelling
Objective 1: School and Childcare Exclusion

- Exclude until 5 days after onset of parotid gland swelling – medical note should indicate that 5 days or more have elapsed.
- During an outbreak, exclude students who have not received mumps vaccine, or staff born in 1957 or later who cannot provide documentation of 2 doses of mumps-containing vaccine on or after their first birthday, until they receive at least 1 dose of mumps vaccine or until 25 days after onset of parotitis in the last person with mumps in the affected school or facility.
- Students and staff with an immunization exemption should be excluded until it is safe for them to return.

11. Rash with fever and behavioral change associated with severe diseases such as Meningitis, Chicken Pox, Measles and other communicable diseases
   - Infectious period varies with agent.
   - Exclude students/children until a healthcare provider has determined that the illness is not a communicable disease (if it is, the disease-specific exclusion criteria apply).
   - Exclude staff and faculty for a rash with fever and joint pain until a communicable disease such as measles or rubella has been ruled out.
   - Medical notes should indicate condition is non-communicable.

12. Rubella (German measles)
   - Contagious via respiratory droplets or contact with ill individual or contaminated objects. May be spread 7 days before and up to 14 days after onset of rash.
   - Exclude until 7 days after onset of rash.
   - Congenital Rubella: Exclude until 1 year of age unless nasopharyngeal and urine cultures after 3 months of age are repeatedly negative for rubella virus.
   - Medical note should indicate non-communicable status.
   - Exclude students ages 12 months to 6 years of age who have not received any doses of rubella vaccine, students 6 or older who have received only one dose, and staff born in 1957 or later who cannot provide documentation of 2 doses of rubella vaccine on or after their first birthday (or laboratory evidence of immunity) until 21 days after the onset of rash in the last person with rubella in the affected school or community. Children too young to receive rubella vaccine, pregnant students, or persons with vaccine exemptions should be excluded until it is safe for them to return.
   - Pregnant student and staff should not receive rubella vaccination.

13. Scabies
   - Communicable via close contact until treatment is completed (usually an overnight treatment with a topical scabicide.) Pruritus may persist after treatment, but does not indicate communicability.
   - Medical note should note evaluation and completion of therapy.

14. Strep Throat (Streptococcal pharyngitis)
   - Infectious via respiratory droplets or contact with contaminated objects until treated with appropriate antibiotic.
Objective 1: School and Childcare Exclusion

- Medical note should indicate initiation of treatment. Parents may not afebrile status.

15. Tuberculosis (active, not LTBI)
- Communicability varies with severity and progression of illness. DHEC or infectious disease physician must clear student or staff member for return to school. Requires documentation of non-communicability.
- Exclude for symptoms, including (Suspect or confirmed TB- cough with bloody phlegm greater than 3 weeks, unexplained weight loss, fever, or night sweats greater than 3 weeks)

16. Whooping Cough (pertussis)
- Communicable from onset of cold-like symptoms until 2 weeks after cough onset – communicable period is shortened with macrolide antibiotics.
- Exclude until completion of 5 days of macrolide antibiotic, such as azithromycin or erythromycin.
- (3-day Z-Pack is not effective)
- Medical note must document prescription of macrolide antibiotic and completion of 5 days of therapy.
- Symptomatic close contacts are considered to be infected and are excluded:
  a. until after 5 days of appropriate antimicrobial therapy, or
  b. if no antibiotics are given, until 21 days after last contact with an infected person (parent note OK for this one), or
  c. until after a negative pertussis test result, or
  d. until a health care provider clears the child or employee to return to school.

Exclusion List Implementation Comments
- For several of these, a medical note could be sent home with the child after the office visit, indicating when the child is eligible to return to school.
- The conditions requiring culture(s) are rare, but may be deadly, especially in the childcare setting.
- Remember that, in an outbreak, children with symptoms similar to the outbreak condition are considered to have that condition, unless a negative test result is obtained. Only one child is a family might have a positive pertussis PCR, but exclusion criteria would apply to all symptomatic siblings.
- **Parents of unimmunized children may not sign declarations that they are OK with their child catching the disease for which exclusion applies.**
  o For example, a vaccinated child who is exposed to chickenpox may develop a mild vaccine-mediate illness with 50 or fewer lesions. They are not incredibly communicable, but they do pose a risk to immunocompromised students, unimmunized students, etc.
  o A susceptible, unvaccinated child exposed to a mild case of varicella runs the risk of developing a severe case of varicella, that is highly contagious and which poses a risk for varicella encephalitis to the ill child.
Objective 1: School and Childcare Exclusion

- There are conditions for which exclusion does not apply, but during which a child may not feel comfortable enough to participate in school activities.
- A condition that does not require a medical note for a child to return to school (e.g., strep and staph skin infections, herpes gladiatorum) may require a medical note to return to sports participation.

Another Great Resource for answering questions about illnesses in the School setting:
Managing Infectious Diseases in Childcare and Schools (American Academy of Pediatrics, 2013)
Objective 2: Be able to identify resources for collaborating with school health personnel in management of chronic conditions like diabetes, asthma, and seizure disorders, as well as intermittent conditions such as migraines and menstrual pain.

- Management plans for chronic conditions published by the National Association of School Nurses
- Policy Statements from American Academy of Pediatrics on management of selected chronic conditions in the school setting

Reminders on 504s and IEPs

- The term "504 Plan" refers to a plan developed to meet the requirements of a federal law that prohibits discrimination against people with disabilities, Section 504 of the Rehabilitation Act of 1973.
- A 504 Plan sets out the actions the school will take to make sure the student with [a chronic medical condition] is medically safe, has the same access to education as other children, and is treated fairly. It is a tool that can be used to make sure that students, parents/guardians, and school staff understand their responsibilities and to minimize misunderstandings.
- Students who qualify for services under the Individuals with Disabilities in Education Act (IDEA) should have an Individualized Education Program (IEP) instead of a 504 plan. This is the document that sets out what the school is going to do to meet the child’s individual educational needs. Because IEPs are so detailed and have specific requirements, school districts often use their own form. Some students who qualify for services under IDEA are also covered by Section 504; there is no need to write two separate plans. Provisions addressing the child’s medical condition should be included in the IEP.

- **Do I have to sign it?**
  - Districts vary in their rules. A healthcare provider must review the plan; often, the disease-specific management plan is sent in by the medical practice and attached to the 504 Plan or IEP.

More on Management Plans

- Management plans create linkages between the family, school, and healthcare provider in the care of the student with a chronic medical condition.
- Plans should be updated annually (generally required for IEPs and 504 plans, *et sim*) AND whenever the child’s regimen, level of self-management, or school circumstances change.
- NASN Management Plans – links to plans and management documents posted by recognized authorities.
- Plans shown here are samples – local education agencies (aka, school districts) may have their own forms.
- These are plans for typical occurrences – it is not generally expected that plans address emergencies, lockdowns, etc.
- Remember that unlicensed assistive personnel in the school setting may be the persons tasked with helping students with medications, testing, etc. Directions should be explicit and not rely on nursing judgement, especially for rescue/emergency medications/procedures.
Objective2: Management of Chronic Health Conditions in Schools

- OTC medication doses may not exceed package labeling. E.g., if a student needs 800 mg Motrin for menstrual cramps (400 mg is dose on the bottle), the medication will have to be prescribed and sent in a prescription bottle.

- In most places, parents may complete forms authorizing the school to administer parent-supplied OTC medications at school. Don’t forget that this might include Pepto Bismol, Imodium, etc.

Self-carry

- Student self-carry of medications is generally limited to rescue/emergency drugs (EpiPen, inhaler, insulin, glucagon, similar.)

- Some districts allow self-carry unless there is evidence that unsupervised self-monitoring or self-medicating would seriously jeopardize the safety of the student or others, (stimulants, pain relief medication, anti-depressants for example).

Sample Action Plans


Asthma

- Green, Yellow, and Red Zones
- Medicine (routine, pre-exercise, symptoms, and rescue/short-acting)
- Peak flow meter goals
Diabetes (American Diabetes Association, 2016)


- Medical Management plan is considerably longer, addressing food, exercise/sports, insulin, and other medications – doses, timing, delivery systems, self-care including testing, student ability to recognize symptoms, special foods/special events, and disaster plan.

- “Self-management” in diabetes includes:
  - The ongoing process of managing diabetes. Includes meal planning, planned physical activity, blood glucose monitoring, taking diabetes medicines, handling episodes of illness and of low and high blood glucose, managing diabetes when traveling, and more.
  - The person with diabetes designs his or her own self-management treatment plan in consultation with a variety of health care professionals such as doctors, nurses, dietitians, pharmacists, and others.

- ADA website also has model 504 Plans and individualized Education Plans for students with diabetes. English and Spanish, Word and PDF.

Seizures

- The NASN seizure management action plan was retired.
- The Epilepsy Foundation has a seizure action plan that can be used to direct care for a child with seizures of the school district does not provide a template. [http://epilepsy.prod.acquia-sites.com/sites/core/files/atoms/files/seizure-action-plan-pdf_0.pdf](http://epilepsy.prod.acquia-sites.com/sites/core/files/atoms/files/seizure-action-plan-pdf_0.pdf)

Migraines

- Sample plans are easily found on the internet.
- Key points to include are ways to avoid triggers, early response to symptoms, and response to severe symptoms.
- ZONES are a great way to describe various states and responses.
Menstrual Pain

- Most likely will be sending a note and/or prescription to the school, even for an OTC medication, depending upon district policies.
- Purpose: “cramps” may not be descriptive enough, and wouldn’t cover menstrual headaches.
- For PRN medications, must clearly indicate when the student may take the medication during the school day. Include frequency if it is anticipated that the medication will be needed more than once per day,
- Duration may be “through the end of the school year” or similar.
- More rules apply for controlled substances, and many schools will not store/administer controlled analgesics.
Safe Access to Vital Epinephrine (SAVE) Act

- The Safe Access to Vital Epinephrine (SAVE) Act, recently approved by the South Carolina Legislature, allows school districts to store supplies of epinephrine auto-injectors for identified school staff to use in emergencies for students with allergic reactions.
- Parents and guardians of students with known allergies should continue to provide Epi-pens for their children. These students will continue to have Allergy Action Plans/IHP developed by the school nurse.

Epinephrine auto-injector

- Defined in statute as a device that automatically injects a premeasured dose of epinephrine into a person
- This law does not address use of vials, ampules, or other delivery methods
- Provision of an epinephrine auto-injector pursuant to this law is not the practice of medicine or nursing

Epinephrine Auto-Injectors -- for provisions of SAVE Act to apply

School Nurses and Designated Personnel

- May administer an epinephrine auto-injector to a student or other individual on school premises whom the school nurse or other designated school personnel believes in good faith is experiencing anaphylaxis
  - In accordance with a standing protocol
  - Regardless of whether the student or other individual has a prescription for an epinephrine auto-injector

Immunity from Liability

- Persons acting in good faith are acting pursuant to a school-based plan, and have received training
- Prescribers/dispensers are included in the immunity provided by the SAVE Act
- Willful or wanton misconduct, negligence, etc., excluded from immunity

SAVE ACT and Providers

- MD/DO, NP, PA may prescribe epinephrine auto-injectors for a specific student or for use as outlined in Subsection D
- Subsection D:
  - School may enter into arrangement to procure epinephrine auto-injectors as fair-market, free, or reduced prices
Another great resource, especially for younger kids

AAP: Policy Guidance for the Administration of Medication in School
(re-affirmed 2013) (American Academy of Pediatrics, Council on School Health, 2009)
[http://pediatrics.aappublications.org/content/pediatrics/124/4/1244.full.pdf](http://pediatrics.aappublications.org/content/pediatrics/124/4/1244.full.pdf)

AAP Advocacy – School Nurses preferred over UAPs
- Use of untrained personnel to administer medication in the school setting creates risks of liability for the school and medication error for the student.
- AAP supports having a full-time licensed RN in the school, for delivery of medication and for the assessment of student health.
- Unlicensed assisting personnel, with special training for specific school health services, should work under the supervision of a licensed RN.
- Prefers statewide policies for health activities, not district-specific.
AAP encourages that states and schools

- Require a written medication form, signed by the authorized prescriber and parent, with the name of the student, the drug, the dose, approximate time it is to be taken, and the diagnosis or reason the medication is needed. This requirement applies for all prescription medications.

- Require written parental approval if over-the-counter (OTC) medications are permitted. Limit the duration that an OTC medication is administered at school. Use of OTC medications over an extended time period warrants an authorized prescriber’s oversight and authorization.

- Permit responsible students to carry and self-administer emergency medications for those conditions authorized by school policies and regulations, which also describe students’/parents’ rights and responsibilities.

- Provide and encourage parents to provide spare life-saving medications in the health office for students who carry and self-administer emergency medications in the event that the life-saving medication cannot be located when a student is in need of the medicine.

AAP Advocacy on Management of long-term conditions in the school

- Asthma, attention-deficit/hyperactivity disorder, seizures, heart conditions, cerebral palsy, and diabetes mellitus are among the common conditions that require medication at school. Although not common, students infected with HIV may require multiple medications during the school day. In most cases, school nurses will develop individualized health plans for children with special health care needs.

- School nurses should review all school medication orders, establish liaisons with the student’s health care professionals, administer medication, and/or provide effective training and supervision of UAP who are delegated to administer medication. Requests to administer nonstandard medications (e.g., doses in excess of manufacturer guidelines; alternative, homeopathic, or experimental medications; nutritional supplements) do not have to be honored by a school nurse. However, a school nurse has a professional obligation to promptly record the request and resolve the conflict with the parent, the prescriber, and/or, when needed, the school physician.

AAP Advocacy on Self-carrying/self-administration of meds in schools

- A responsible student should be permitted to carry medication for urgent or emergency need when it does not require refrigeration or security, according to policies determined by the school in accordance with laws, regulations, and standards. Controlled substances and those at risk of drug abuse or sale to others are not appropriate for self-carrying. The student’s personal health care professional, the parents, and the school nurse and school physician should collaboratively determine the ability of a student to self-administer the prescribed medication appropriately in a responsible and secure manner.

- For elementary school-aged children, the self-administration of a dose of medication should be reported to school personnel as soon as the self-administered dose is given for documentation and assessment of need for additional assistance. Medications carried by students should be either on the person of the student, as in a dedicated “fanny pack,” or in possession of a supervising adult who will return the medication pack to the student as needed or when the student moves on to a new location. Medications should not be left unattended.
OTC Meds in the School

From LLR: Joint Advisory Opinion issued by the South Carolina Boards of Medical Examiners, Nursing and Pharmacy regarding Over the counter Medications in Schools (S.C. Department of Labor, Licensing and Regulation, 2013)

- Within scope of practice for RN or LPN to administer OTC med in school setting with parental consent. However, if med is prescribed by authorized licensed provider, it must be treated like a prescription.
- No OTC prescriptions for students with whom prescriber does not have a physician-patient relationship.
- If OTC is prescribed, it cannot be accepted in an off-the-shelf bottle with the student’s name on a tag/label. Must be labeled as required for all prescription drugs.
- If there is no RX, nothing in current practice acts prevents a school and/or school nurse from accepting OTC med in manufacturer’s original packaging with a tag bearing the student’s name attached.
- School may maintain a stock supply of commonly prescribed OTC meds to avoid having to store multiple student’s medications.

Stocking OTC Medications in Health Rooms

- Plus side: antihistamines, anti-inflammatories, pain relievers allow school attendance, less classroom disruption; parents do not have to leave work for minor aches and pains.
- Risk Side: Liability for potential harm from OTC meds, sharing meds if OTC meds are not kept in health room; inappropriate use of cough/cold medicines to keep children who are contagious/too ill to participate in schools.

Alternative Medicines in the School Setting

- Herbals and homeopathic meds do not have FDA testing/approval. Lack data for safety, effectiveness.
- Never administered without an order – school might opt to refuse to administer.
- School policies should address experimental medications, and doses given in excess of manufacturer guidelines.

AAP Recommendations for Prescribers (partial list):

1. Prescribe medications for administration at school only when necessary. Many short-term and long-term medications can be given before and after school.
2. Learn about local school nursing services, medication policies and forms, and self-administration procedures.
3. Write specific, clear, and detailed instructions on dated, standardized school medication forms. Consider that the “need to treat” may be delegated to UAP.
4. Carefully assess and declare in writing your recommendation concerning students’ self-carrying/self-administration on the basis of your patient demonstrating the appropriate developmental, physical, and intellectual capacity to self-carry and/or self-administer an emergency medication at school.
Comments on Medications from School Nurse Forum (RNsights, 2017)

- I get a letter from the MD stating that they can carry it. That is our school’s policy. I don’t necessarily agree with it, especially for Epi-pens. I am in a very spread out building and it would take too long for someone from the other side to get to my office and back in an emergency, For those kids I ask parents to get notes.

- I have very mixed feelings about students in 5th and 6th grade carrying inhalers. On the one hand it makes perfect sense that a responsible student has his/her medication and be able to administer it according to the prescription and when necessary. ... I find that there is a big learning curve. I think that nine times out of ten a newly diagnosed patient would benefit from using a spacer at least in the beginning.

- We do not keep stock meds and the parent must sign a consent for the meds they bring in. Must also fall within weight/age range—I get alot of parents upset with me bc I cannot give their 11yo adult Tylenol. Bottle clearly states 12 and older. Same for Motrin. Don’t care how much they weigh—there is a reason it says 12 and older and not weight based.
Objective 3: Controlled Substances in Schools

**Objective 3:** Describe the state laws and district policies for use of controlled substances in schools when used for management of specified conditions (pharm content, controlled substances content)

- S.C. Board of Nursing statements on OTC Medications in Schools, Medication Administration in the School Setting
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**Relevant BON Opinions**

**Summary:**
A licensed nurse practicing in the school setting may select, train, determine competency and evaluate unlicensed school personnel in provision of treatments and in the administration of medications required to meet a specific student’s needs (#50) in the event that a medical emergency occurs when a licensed nurse is not readily available; (#51) in performance of selected nursing tasks required in order for a student to attend school, and (#52) to assist students with medications taken on a routine schedule.

- (Advisory opinion #50 [Competency in the school setting (UAP)], 2016)
- (Advisory opinion #51 [Nursing tasks (UAP)], 2013)
- (Advisory opinion #52 [Assisting with meds in school settings (RN)], 2013)

**OTC Medications**


**Question 5: Should students be allowed to self-medicate with a medication that is a controlled substance?**

Section 59-63-80 does not specify which medications may or may not be self-administered by students. Controlled substances include medications that have the potential for abuse and are dispensed by pharmacists under the guidelines of the 1970 Comprehensive Drug Abuse Prevention and Control Act. The Act is designed to control the distribution and use of all depressant and stimulant drugs and other drugs of abuse or potential abuse as may be designated by the Drug Enforcement Administration of the Department of Justice. Controlled substances in the school setting are traditionally kept in locked cabinets with limited access, and all controlled substances (e.g., pills, suppositories, syrups) should be accounted for at least weekly to ensure that nothing is missing.

Of those students who responded to the 2011 South Carolina Youth Risk Behavior Survey, 5.5 percent of the middle school students and 20.9 percent of the high school students indicated that they have used medications such as Ritalin, Adderall, or Xanax without a doctor’s prescription. Given the potential for addiction and abuse and the data suggesting significant misuse of controlled substances among students, the SCDE believes that self-medication of controlled substances could seriously jeopardize the safety of the student and others. The SCDE therefore recommends that schools continue to maintain and administer controlled substances under the supervision of a licensed school nurse.
AAP statement on Medication Administration in Schools
(American Academy of Pediatrics, Council on School Health, 2009)

- Districts should ... use a systematic review of documentation of medication-administration records for quality improvement, especially to reduce medication errors and to verify controlled substance counts.
- Controlled substances must be double-locked.
- Controlled substances and those at risk of drug abuse or sale to others are not appropriate for self-carrying.

National Association of School Nurses on Controlled Substances

- Pharmaceutical controlled substances are drugs that have a legitimate medical purpose, coupled with a potential for abuse and psychological and physical dependence. They include opiates, stimulants, depressants, hallucinogens, and anabolic steroids. The safe and effective use of controlled substances by students at school has increased dramatically because of their accepted use in treatment of illness and disability enabling many sick and disabled children to attend school.
- School policies should address use of controlled substances, including whether these may be administered during the school day.

Schools policies: Find out what the districts serving your main patient base require

- No students may ... possess controlled substances (OK to receive then at school, cannot self-carry.)
- ...distribute...
- ... attend when under the influence of a controlled substance (assumes impairment)
Objective 4: Have a familiarity with common parental requests for administration of off-label/non-FDA-approved medications/non-FDA-approved indications/other substances in the school setting (pharm content, controlled substances content)

- Common parent questions regarding cannabis oil, nasal midazolam, herbal/dietary supplements, and essential oils.
- Pharmacological information on selected medications.
- Current guidance provided by S.C. DHEC and S.C. Dept. of Education to school nurses on these substances.

Information from the NIH: Valuable for you and parents of your patients

Children with chronic medical conditions, including anxiety, musculoskeletal conditions, and recurrent headaches, are more likely than other children to use complementary health approaches, usually along with conventional care.
10 most common complementary health approaches among children – 2012

<table>
<thead>
<tr>
<th>Approach</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Products</td>
<td>4.9%</td>
</tr>
<tr>
<td>Chiropractic or Osteopathic</td>
<td>3.3%</td>
</tr>
<tr>
<td>Manipulation</td>
<td></td>
</tr>
<tr>
<td>Yoga, Tai Chi, or Qi Gong</td>
<td>3.2%</td>
</tr>
<tr>
<td>Deep Breathing</td>
<td>2.7%</td>
</tr>
<tr>
<td>Homeopathy</td>
<td>1.8%</td>
</tr>
<tr>
<td>Meditation</td>
<td>1.6%</td>
</tr>
<tr>
<td>Special Diets</td>
<td>0.7%</td>
</tr>
<tr>
<td>Massage</td>
<td>0.7%</td>
</tr>
<tr>
<td>Guided Imagery</td>
<td>0.4%</td>
</tr>
<tr>
<td>Movement Therapies</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

*Note: List does not include vitamins and minerals.*

45K American surveys by National Health Interview Survey in 2012 – looked at CAM approaches to health in 45K Americans, including 10K children. 11.6% of children had been given some form of complementary health product or practice, such as yoga or dietary supplements, during the past year. Most frequent were natural products, such as fish oil, melatonin, and probiotics, and chiropractic and osteopathic manipulation.

**Definitions: Complementary and Alternative Medicines**

*(Alaska Division of Public Health, School Nursing/School Health Program, 2015)*

- A group of diverse medical and health care systems, practice and products that are not presently considered to be part of conventional Western medicine (The National Center for Complementary and Alternative Medicine (NCCAM) of the National Institutes of Health (NIH))
- Dietary supplements and essential oils can be marketed without proven safety or efficacy. No FDA evidence is required of safety, purity, or effectiveness of the product or reporting of any data on adverse events. Cannot tell if there are contaminants, including drugs, chemicals, or metals. Product quality is influenced by many factors, including which portion of the plant is...
used (i.e., root, stem, leaves, flowers), the time of harvest (i.e., young versus old plants), the handling of the product and proper identification.

- “Research” cited by families – research is not just a single study with an outcome. Must be valid, replicated, systematic, etc.

Talking with families about CAM in the Schools

- Avoid dismissal of complementary or alternative medical treatments in ways that communicate a lack of sensitivity or concern for the family’s perspective.

- It is important to support parents in their preferences for health care and help them find safe solutions to such dilemmas.

- Not administering a product in school does not prevent parents from administering it at home or coming to school to administer it themselves.

Guidance from outside SC

- **Alaska:** School policy should prohibit any school personnel from administering an herbal medication, nutritional supplement or essential oils orally; students should not be allowed to carry them on their person. A request for any other route of administration (i.e., applied directly on the skin, inhaled, etc.) should be accompanied by a written health care provider order (per AAP policy and as defined in above nursing regulations) and parent authorization. The health care provider should provide verification that the product is safe to administer to children in the prescribed dose, is therapeutic and has no untoward effects.

- **NIH:** Do not rely on asthma products sold over-the-counter and labeled as homeopathic, the U.S. Food and Drug Administration (FDA) warns. Homeopathic remedies and dietary supplements are not evaluated by the FDA for safety or effectiveness.


Essential oils

- May be safe when applied one way, irritating to skin when applied a different way (concentrations as low as 3-5%) Others may trigger allergies in sensitive persons.

- Sun sensitivity/phototoxicity possible following application of citrus oils, including bergamot, lemon, lime, orange, and angelica.

Aromatherapy & Essential Oils in the School

- No FDA approval – some districts will prohibit outright.

- Other nurses may determine that they do not feel comfortable administering a substance that is not FDA-approved.

- No control over what is applied to student before school – schools may address use if other students’ allergies are triggered when student arrives at school.

- Some teachers are reported to have used EO diffusers in the classroom setting to calm or focus students – if your student has allergies, asthma triggered by fragrances, this concern should be indicated on his/her IEP or 504 plan.
FDA: Generally Recognized as Safe


(Substances generally recognized as safe. 21 CFR 182.20 , 2016)

- List of essential oils, oleoresins (solvent-free), and natural extractives that are generally recognized as safe for their intended use... are as follows:
- Alfalfa through Zeodary bark.

School Nurse Forum Comments on CAM (RNsights, 2017)

- Diffuser: Wouldn’t you be treating everyone in the room, most without a prescription?
- Cannot use non-FDA-approved substances.
- I use them on teachers and staff, but not students.
- Parents insisting that school nurse apply these three times during child’s school day – MD wrote Rx for this.
- Parent wanting bedtime oils used during sleepovers.
- EOs are pagan and violate Christianity.
- If a doctor is willing to write an order for use, why should we deny something that may be helpful. Clearly, you do not understand the healing power of aroma therapy.

What about Cannabis Products?

S.C. Law: Title 44 – Health, Chapter 53: Poisons, Drugs and Other Controlled Substances

Article 3 – Narcotics and Controlled Substances

(27)(a) "Marijuana" means: ...

(27)(b) “Marijuana” does not mean:

(v) for persons participating in a clinical trial or in an expanded access program related to administering cannabidiol for the treatment of severe forms of epilepsy pursuant to Article 18, Chapter 53, Title 44, a drug or substance approved for the use of those participants by the federal Food and Drug Administration; or

(vi) for persons, or the persons' parents, legal guardians, or other caretakers, who have received a written certification from a physician licensed in this State that the person has been diagnosed by a physician as having Lennox-Gastaut Syndrome, Dravet Syndrome, also known as "severe myoclonic epilepsy of infancy", or any other severe form of epilepsy that is not adequately treated by traditional medical therapies, the substance cannabidiol, a nonpsychoactive cannabinoid, or any compound, manufacture, salt, derivative, mixture, or preparation of any plant of the genus cannabis that contains nine-tenths of one percent or less of tetrahydrocannabinol and more than fifteen percent of cannabidiol.

(27)(c) For purposes of this item, written certification means a document dated and signed by a physician stating that the patient has been diagnosed with Lennox-Gastaut Syndrome, Dravet Syndrome, also known as "severe myoclonic epilepsy of infancy", or any other severe form of epilepsy that is not adequately treated by traditional medical therapies and the physician's conclusion that the patient might benefit from the medical use of cannabidiol.
(27)(d) A physician is not subject to detrimental action, including arrest, prosecution, penalty, denial of a right or privilege, civil penalty, or disciplinary action by a professional licensing board for providing written certification for the medical use of cannabidiol to a patient in accordance with this section.

- Per NORML, there is no home cultivation allowed, there are no state-licensed dispensaries, no caregiver prescribing rights, and no reciprocity for product purchased legally in another jurisdiction. [http://norml.org/legal/item/south-carolina-cbd-marijuana-law](http://norml.org/legal/item/south-carolina-cbd-marijuana-law)
- Palmetto Harmony available for sale in some locations: $220 for a small bottle – could not locate info on doses per bottle, bottle volume, etc.

**Random Fact**

- The term "food" as used in Section 44-53-10 shall include every article used for food or drink by man, including all candies, teas, coffees and spirituous, fermented and malt liquors. The term "drug" as used in Section 44-53-10 shall include all medicines for internal or external use.

**AAP CE Presentation on Cannabidiol, other Complementary and Alternative Medications**
(American Academy of Pediatrics, 2016)

- Current issues in CAM include Study design (small sample size, duration of study, limitations, and generalizability); adverse reactions to drugs with varying or unknown ingredients
- Bias is also a factor to consider when reviewing CAM studies: Sponsorship, skilled practitioners vs. amateurs, others.
- Important for family not to stop/change seizure medications without consulting the epileptologist
- Certain oils trigger seizures: rosemary, fennel, sage, eucalyptus, hyssop, camphor, and spike lavender. Others may cause break-through seizures.
- Review of cannabinoids: Class of diverse chemical compounds that activate cannabinoid receptors on cells that repress neurotransmitter release in the brain. Can have effect of reduction of both inhibitory and excitatory transmission of neurochemicals.
- 85+ identified, THC and CBD are main ones. CBD is main nonpsychoactive components. Has anticonvulsant properties.
- Synthetic cannabinoids ("spice") can cause psychosis, tachyarythmias, seizures.
- Animal research: Can reduce frequency and severity of seizures, and reduce seizure-related mortality. Human Research: very small studies, positive effect seen over placebo in some but not all studies.
- **Cochrane**: “No reliable conclusions can be drawn at present [2012] regarding the efficacy of cannabinoids as a treatment of epilepsy. The dose of 200 to 300 mg daily of cannabidiol was safely administered to small numbers of patients, for generally short periods of time, and so the safety of long term cannabidiol treatment cannot be reliably assessed. (Gloss & Vickrey, 2014)
Stanford study of Cannabidiol using Facebook group
(Porter & Jacobson, 2013)

- 19 children: Dravet syndrome (13), Doose syndrome (4), Lennox-Gastaut syndrome (1), idiopathic epilepsy (1).
- Average number antiepileptic drugs taken before trying cannabidiol-enriched cannabis oil was 12. 16 of 19 parents reported reduction of seizures. Other benefits: better mood, increased alertness, improved sleep, decreased self-stim behaviors.
- Negative effects: drowsiness, fatigue.
- Because of the increasing number of states that allow access to medical cannabis, its use will likely be a growing concern for the epilepsy community. Safety and tolerability data for cannabidiol-enriched cannabis use among children are not available. Objective measurements of a standardized preparation of pure cannabidiol are needed to determine whether it is safe, well tolerated, and efficacious at controlling seizures in this pediatric population with difficult-to-treat seizures.

AAP summary on CAM, CBD

- Some evidence from modeling that CBD and other cannabinoids have antiseizure effect. Limited and low-quality evident of antiseizure effect in humans. Appears to be well tolerated in short-term use.
- Questions still pending:
  - Who will respond?
  - What dose is optimal?
  - How do varying proportions of cannabinoids affect outcome or response?
  - Are there additive or adverse effects when combined with other antiseizure medications?
  - Does tolerance develop?
  - Are there long-term adverse effects?

Current Status of Cannabis Oils, similar products:

- Schedule 1 substance per DEA, even though legalized by some states
- If “moved to lower schedule”, school administration would require
  - 2 school employees for medication counts when received and weekly
  - Locked cabinets
  - No self-medication
  - (Likely): Rx of manufactured product with FDA approval and not “homemade” product
"We've had a little girl that had 200 seizures a day. She's down to two, which are like twitches now," said Erika Erhenford, co-owner of Natural Health Pharmacy.


Parent requests for Rx for Intranasal Midazolam

Treatment of Acute Seizures: Is Intranasal Midazolam a Viable Option?

Background on midazolam (Versed)

- Water soluble in packaging, becomes fat-soluble/lipophilic at physiologic pH, thus allowing for crossing of the blood-brain barrier.
- Patients must be monitored for signs of cardiorespiratory depression after receiving midazolam.
- In obese children, the dose should be calculated based on ideal body weight.
- Midazolam hydrochloride syrup is intended for use in monitored settings only and not for chronic or home use. Midazolam hydrochloride syrup must be used as specified in the label.

Dosage and Administration

- Midazolam HCl syrup is indicated for use as a single dose (0.25 to 1 mg/kg with a maximum dose of 20 mg) for pre-procedural sedation and anxiolysis in pediatric patients. ([https://www.drugs.com/pro/midazolam-syrup.html](https://www.drugs.com/pro/midazolam-syrup.html))
- Midazolam HCl syrup must be given only to patients if they will be monitored by direct visual observation by a health care professional.
- Midazolam HCl syrup should only be administered by persons specifically trained in the use of anesthetic drugs and the management of respiratory effects of anesthetic drugs, including respiratory and cardiac resuscitation of patients in the age group being treated.
- Midazolam IM/IV formulation is what is pictured in tutorials for intranasal administration.
Midazolam: Boxed warning

Midazolam for IV/IM Use (this is the formulation used for intranasal application)

- **Respiratory depression**: Midazolam has been associated with respiratory depression and respiratory arrest, especially when used for sedation in noncritical care settings. In some cases, where this was not recognized promptly and treated effectively, death or hypoxic encephalopathy has resulted. Midazolam should be used only in hospital or ambulatory care settings, including physicians' and dental offices, that provide for continuous monitoring of respiratory and cardiac function (i.e., pulse oximetry). Immediate availability of resuscitative drugs and age- and size-appropriate equipment for bag/valve/mask ventilation and intubation, and personnel trained in their use and skilled in airway management should be assured. For deeply sedated pediatric patients, a dedicated individual, other than the practitioner performing the procedure, should monitor the patient throughout the procedure. (Clinical Drug Information, LLC, 2015)

- IM administration has AAP recommendation for use during seizures.

Facts and Comparisons: Off-label uses for Midazolam

- **Seizures (children/adolescents)** Evidence from randomized, controlled trials with important limitations (inconsistent results, methodological flaws, indirect or imprecise), or very strong evidence of some other research design. Further research (if performed) is likely to have an impact on confidence in the estimate of benefit and risk and may change the estimate. Use has been substantiated by inclusion in at least one evidence-based or consensus-based clinical practice guideline.

- **Status epilepticus (children/adolescents/adults)** Consistent evidence from well-performed randomized, controlled trials or overwhelming evidence of some other form (e.g., results of the introduction of penicillin treatment) to support the off-label use. Further research is unlikely to change confidence in the estimate of benefit. Use has been substantiated by inclusion in at least one evidence-based or consensus-based clinical practice guideline.

So, does it work well for seizures?

- Data from a clinical trial comparing the use of intramuscular midazolam and intravenous diazepam in children with motor seizures of at least 10 minutes in duration supports the use of intramuscular midazolam in this setting. Additional trials may be necessary to define further the role of midazolam for this condition.

- Based on the American Academy of Pediatrics, the use of intramuscular midazolam is an effective and recommended treatment for seizures in children and adolescents.

- Data from a double-blind, randomized, noninferiority trial comparing the use of intramuscular midazolam to intravenous lorazepam in both children and adults supports the use of intramuscular midazolam for the treatment of status epilepticus.

- Based on the Neurocritical Care Society Guidelines for the Evaluation and Management of Status Epilepticus, the use of intramuscular midazolam is an effective and recommended treatment and is the drug of choice when intramuscular administration is necessary for emergent control of status epilepticus in children, adolescents, and adults.
Here’s the School Issue

- Rectal Diastat (known to work, but embarrassing) vs. Intranasal Midazolam for acute seizures in the school setting.
Lit Review

(Humphries & Eiland, 2013) (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3668946/)

- Reviews data on intranasal midazolam vs. rectal diazepam in treatment for acute seizures in prehospital, home, and emergency department settings.
- “Most seizures self-terminate within 5 minutes, but those lasting longer warrant medication administration for seizure cessation and status epilepticus avoidance.” Both routes rich in venous circulation and offer the benefit of avoiding intravenous line placement.
- Goal: rapid penetration into the nervous system. These drugs are highly lipophilic.
- “Rey and colleagues studied the pharmacokinetics of intranasal midazolam in 6 children (ages 1–5 years) and found the time to maximum concentration to be 12 minutes with a half-life of 2.2 hours when a dose of 0.2 mg/kg was administered.”
- Rectal diazepam gel readily absorbed, but can accumulate, and bioavailability ranges from 50% to 100%. Some studies show erratic absorption; drug also does not avoid first pass through hepatic circulation.
### Selected Studies Comparing Intranasal midazolam with Rectal diastat administration for acute seizures in children

<table>
<thead>
<tr>
<th>Study subjects, other details, Citation</th>
<th>Regimen</th>
<th>Seizure Cessation Time</th>
<th>Summary from authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tx location not specified. Prospective randomized trial – diazepam administered on odd days of the month, midazolam on even days 45 children, ages 1 month to 13 years) (Fişgin, et al., 2002)</td>
<td><strong>IN midazolam</strong>&lt;br&gt;Dose 0.2 mg/kg&lt;br&gt;Seizure cessation within 10 minutes 87% (n=20)</td>
<td>Seconds&lt;br&gt;0-60 (n=5)&lt;br&gt;60-120 (n=9)&lt;br&gt;120-300 (n=5)&lt;br&gt;300-600 (n=1)</td>
<td>Intranasal midazolam is preferable to rectal diazepam in the treatment of acute seizures in children. Its administration is easy, it has rapid onset of action, has no significant effect on respiration and oxygen saturation, and is socially acceptable.</td>
</tr>
<tr>
<td></td>
<td><strong>R diazepam</strong>&lt;br&gt;Dose 0.3 mg/kg&lt;br&gt;Seizure cessation within 10 minutes 60% (n=13)</td>
<td>Seconds&lt;br&gt;0-60 (n=1)&lt;br&gt;60-120 (n=4)&lt;br&gt;120-300 (n=7)&lt;br&gt;300-600 (n=1)</td>
<td></td>
</tr>
<tr>
<td>Tx by doctor in clinic (India) 46 children, ages 3 months to 12 years, 188 seizure episodes (Bhattacharyya, Kalra, &amp; Gulati, 2006)</td>
<td><strong>IN midazolam</strong>&lt;br&gt;Dose 0.2 mg/kg, via dropper (n=92)</td>
<td>116.7 seconds, SD 126.9</td>
<td>Seizures cessation within 10 minutes: 88.5% diazepam vs 96.7% midazolam group</td>
</tr>
<tr>
<td></td>
<td><strong>R diazepam</strong>&lt;br&gt;Dose 0.3 mg/kg</td>
<td>178.6 seconds, SD 179.4</td>
<td></td>
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<tr>
<td>Tx by Paramedics (n=57) 57 children, 8 months to 17 years, 57 seizure episodes (Holsti, et al., 2007)</td>
<td><strong>IN midazolam</strong>&lt;br&gt;n=39&lt;br&gt;Dose 0.2 mg/kg, max 10 mg</td>
<td>11 minutes&lt;br&gt;Median 660, range 60-3000 seconds (EMS witness seizure time for 25)</td>
<td>The IN-MAD midazolam controlled seizures better than PR diazepam in the prehospital setting and resulted in fewer respiratory complications and fewer admissions.</td>
</tr>
<tr>
<td></td>
<td><strong>R diazepam</strong>&lt;br&gt;n=18&lt;br&gt;Dose 0.3 to 0.5 mg/kg, max 20 mg</td>
<td>30 minutes&lt;br&gt;Median: 1800, range 300-4800 seconds (EMS witnessed seizure time for 13 cases)</td>
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</tbody>
</table>
Selected Studies Comparing Intranasal midazolam with Rectal diastat administration for acute seizures in children

<table>
<thead>
<tr>
<th>Study subjects, other details, Citation</th>
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</thead>
<tbody>
<tr>
<td>Tx in home by caregiver (median 5 mins from onset to tx for both groups) (n=92) (Holsti, et al., 2010)</td>
<td><strong>IN midazolam</strong> (n=50; median age 5.6 years) Dose 0.2 mg/kg, max 10 mg</td>
<td>3 minutes (180 seconds, range 60-600++)</td>
<td>Caretakers were more satisfied with IN-MMAD and report that it was easier to give than RD.</td>
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<tr>
<td></td>
<td><strong>R diazepam</strong> (n=42; median age 6.9 years) Dose 0.3 to 0.5 mg/kg, max 20 mg</td>
<td>5 minutes (260 seconds, range 120-870++)</td>
<td></td>
</tr>
</tbody>
</table>

**Holsti 2010:**

- The chief limitation of our study was the unblinding of study medication and possible selection bias. To keep this study blinded, caretakers would have had to give a study medication and placebo for their child's seizure, one intranasally and one rectally. We concluded that this would prove unacceptable to caretakers.

- Our study was powered to detect a 10-minute difference in seizures between groups. We observed a 1.3-minute difference in the 92 patients who were finally enrolled. A conditional power analysis prompted termination of the study owing to a very low likelihood of showing a statistical difference in treatments unless a larger number of patients were enrolled than the expected 120. This study was not sufficiently powered to show equivalence between the 2 treatment modalities.

- No meds were given by teachers. Some differences in training provided to parents, and the trained parent was not always the one who administered the medication.

**Info from review of S.C. BON minutes**

The issue has been addressed at least 4 times in meetings of the S.C. Board of Nursing, though not yet written into the Advisory Opinions posted on the website.

From minutes of the S.C. Board of Nursing, 9/30/2010 (S.C. Department of Labor, Licensing and Regulation, Office of Board Services, 2010, p. 6):

The administration of intranasal Versed (midazolam) in school setting for treating status epilepticus has been reviewed by the Nursing Practice and Standards Committee in July 2010 and by the Advanced Practice Committee in August 2010. Both committees feel that Administration of Intranasal Versed (midazolam) in school setting for treating status epilepticus is not within the scope of practice for the nurse. This information has also been reviewed by the Board of Medical Examiners who agrees with this recommendation.

Discussion included but was not limited to this administration being an off label use of the medication and differences in education and experience among the nurses.
A motion was made by Brenda Yates Martin to accept the Nurse Practice and Standards Committee as well as the Advance Practice Committee recommendation that the administration of intranasal Versed (midazolam) in school setting for treating *status epilepticus* is not within the scope of practice for the nurse. Carrie Houser James seconded the motion. The motion carried unanimously.

This was addressed again in the minutes for the **November 2011** Board meeting. Those minutes report (S.C. Department of Labor, Licensing and Regulation, Board of Nursing, 2012, p. 6):

“At its October 13, 2011 meeting, the Nurse Practice and Standards Committee (NPSC) discussed can a nurse in a school setting provide a student with scheduled and rescue doses of oral or IM Midazolam for seizure control. The committee recommended the Board say no given current FDA and manufacturer warnings.

At its September 2010 meeting, the Board decided the administration of intranasal Versed (Midazolam) in a school setting for treatment of status epilepticus was not within the scope of practice of a nurse.”

A motion was made by Samuel McNutt to approve Nurse Practice and Standards Committee request as submitted. Carol Moody seconded the motion. The motion carried.

In **June of 2013**, the Pain Management Collaborative Task Force raised the question: Can licensed RNs and LPNs administer sublingual, buccal, or intranasal midazolam (Versed) if ordered by a licensed SC physician? The Task Force brought the question to the full Board meeting July 25-26, 2013, at which time, the November 2011 minutes were clarified to have been an official action by the SC Board of Nursing regarding an agenda item presented for the school setting. (S.C. Department of Labor, Licensing and Regulation, Board of Nursing, 2013, p. 5)

*NB:* the answer to the question _outside_ of the school setting was not provided.

In **September of 2013** (S.C. Department of Labor, Licensing and Regulation, Board of Nursing, 2013), the Board was specifically asked: Does the SC State Board of Nursing prohibition of nurses administering mucosal versed (nasal, buccal, or sublingual) in the school setting also apply to nurses who practice in the home or community setting? At that time, it was further clarified that the statement that application of mucosal (nasal, buccal, or sublingual) versed was not within the scope of practice of the nurse was applicable only to school settings (p. 10). Also during that meeting, Dawn Thomas appeared before the Board to discuss administration of midazolam (Versed) in the school setting. The minutes report...

Discussion *[in open and executive session]* included but was not limited to the method(s) of administration, potential side effects, off-label use, and whether a licensed or unlicensed person would administer the medication. ...

The Board shared their sympathy and relayed that they empathized with the family. They discussed the Board of Nursing’s responsibility for regulating the practice of nursing.

A motion was made by Amanda Baker that it is not within the scope of practice of the RN or LPN to administer intranasal Versed in the school setting. Karen Hazzard seconded the motion. The motion carried unanimously. (p. 11)
It appears that in each instance, the Board has determined that nasal/mucosa administration of Versed/Diastat/midazolam in a school setting for treatment of status epilepticus was not within the scope of practice of a nurse. Further, oral and intramuscular administration is not recommended in the school setting based upon manufacturer warnings.


- “Until federal officials approve nasal use of midazolam and the state Board of Nursing recognizes such use, school nurses would be violating their own regulations in administering the drug nasally to students. Hundreds of school nurses contacted Senate Education Committee members with their concerns in the past week.” (Hollemann, 2014)

- Currently, the standard practice in life-threatening epileptic cluster seizures is to use the drug diazepam, Porter said. It must be administered rectally, however, which can be difficult and embarrassing.

So, the issue is settled?

  - TO CREATE THE "SEIZURE SAFETY IN SCHOOLS STUDY COMMITTEE" TO EXAMINE ISSUES RELATED TO EPILEPSY AND SEIZURE SAFETY AWARENESS IN PUBLIC SCHOOLS, TO PROVIDE FOR THE MEMBERSHIP OF THE STUDY COMMITTEE, AND TO PROVIDE FOR THE STUDY COMMITTEE'S TERMINATION.
  - SECTION 1.
There is created the "Seizure Safety in Schools Study Committee." The study committee shall review information concerning:

- (3) existing laws, regulations, and policies affecting epilepsy and seizure safety in public schools; and
- (3)(D) Before January 31, 2018, the study committee shall make a report of the committee's recommendations to the General Assembly at which time the study committee must be dissolved.

Though not mentioned in the text of the bill, there is thought that this may be a way to work towards use of intranasal midazolam in the school setting. Short timeframe for the committee's work.

Comments from School Nurse Forum  
(RNsights, 2017)

- We have orders for nasal versed and have delegated it to our staff
- We have the parent come in to give the med [nasal versed].
- We do have protocols which require close monitoring of vital signs if these meds [nasal versed] are given as well as having oxygen and suction on hand. We would never delegate to unlicensed staff.
- We have one boy that gets diastat at least 1 time a week poor boy! He has cluster seizures and grand-mal he is such a little trooper. We don’t do it on school bus they pullover , keep student safe and call 911.
- How do Middle School and High Schools in your district handle seizures & Diastat administration, seeing that the seizure will most likely occur in the halls or classroom? Also, we have a nurse on one of our buses for the purpose of a prn Diastat.

Website your families may visit
Therapeutic Intranasal Drug Delivery [http://www.intranasal.net/]

- Disclaimer: Most IN medications are off label and do not have FDA or other countries regulatory agency approved indications for intranasal delivery. Clinicians should use them based on patient needs and peer reviewed literature support realizing that many medical therapies and medication uses are used "off-label."
- It is virtually impossible for a new drug to get approved for all indications, ages and dosage forms. However once the product is marketed, creative clinicians often start exploring new uses and new indications in an attempt to help their patients. These investigations and “off-label” use are more common in disease states that are uncommon and where there is little financial incentive for the manufacturer to pursue additional indications.
- Transmucosal delivery of benzodiazepines (midazolam or lorazepam) provides a very effective, safe, and inexpensive means to rapidly achieve seizure control.
- The principle first-line agents for the treatment of status epilepticus are the benzodiazepines, which are GABA agonists. Therefore the longer a seizure persists the less effective this class of medicines may be suggesting that the earlier benzodiazepines are delivered the better.
- Transmucosal delivery of generic benzodiazepines via the nasal mucosa offers an attractive and cost-effective alternative in the out-of-hospital setting.
References


Humphries, L. K., & Eiland, L. S. (2013, Apri-June). Treatment of acute seizures: Is intranasal midazolam a viable option? [Figure 1: Drug delivery to the CNS from nasal formulations]. *The Journal of Pediatric Pharmacology and Therapeutics, 18*(2), 79-87. doi: http://dx.doi.org/10.5863/1551-6776-18.2.79


References


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S.C. Department of Labor, Licensing and Regulation, South Carolina Board of Nursing. (2016, March). *Advisory opinion #50 [Competency in the school setting (UAP)]*. Retrieved from [http://www.llr.state.sc.us/POL/Nursing/AdvisoryOp/AO50.pdf](http://www.llr.state.sc.us/POL/Nursing/AdvisoryOp/AO50.pdf)

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