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# Emergency Medications: Policies and Practices in Missouri Schools 2018



June 2018

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Missouri Department of Health and Senior Services

Missouri School Health Program

**Issue Brief:  
Evaluation Project Results Report**

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## Issue Brief:

# Emergency Medication: Policies and Practices



**Missouri Department of Health and Senior Services**

**Missouri School Health Program**

**920 Wildwood, P.O. Box 570**

**Jefferson City, Missouri 65102-0570**

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## **Project**

**Emergency Medication: Policies and Practices**

## **For More Information**

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## **Acknowledgment**

**Special thanks to the lead school nurses and staff who participated in the survey. This valuable information would not be available without their cooperation.**

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# Contents

**Background and Purpose..... 5**

**Methods..... 6**

**Responding School Districts..... 7**

**Findings..... 8**

**Conclusion..... 12**

**References..... 12**

**Appendix..... 14**

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# Background and Purpose

Any child can experience a medical emergency at school.<sup>1</sup> School nurses are increasingly responding to individual student medical emergencies because of injuries, chronic health conditions, or unexpected illnesses. Schools have to be prepared to respond to these emergencies. Two such situations include a child suffering an acute asthma exacerbation or anaphylaxis resulting from exposure to an allergen.

Originally enacted in 2006, and revised in 2010, Section 167.630. RSMo (formerly House Bill [HB] 1245 and 1543, respectively) permits school districts in Missouri to maintain an adequate supply of prefilled auto syringes of epinephrine for use in the care of any student who is having a life-threatening anaphylactic reaction. It allows a school nurse or other trained employee to administer such medication.

Similar to the epinephrine legislation, enacted on August 28 2012, Section 167.635.1, RSMo (formerly HB1188) permits school districts in Missouri to maintain a stock supply of “asthma-related rescue medications” for use in the care of any student who is having a life-threatening asthma episode. It also allows a school nurse or other trained employee to administer such medication.

The State School Nurse Consultant and program staff conducted a survey of lead school nurses in public school districts in February-March 2018 to:

- Better understand the degree to which school districts have adopted and developed policies regarding HBs 1543 and 1188 and to address other medical emergencies,
- Identify implementation challenges, and
- Determine awareness of emergency medical services’ response times, when needed.

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## Methods

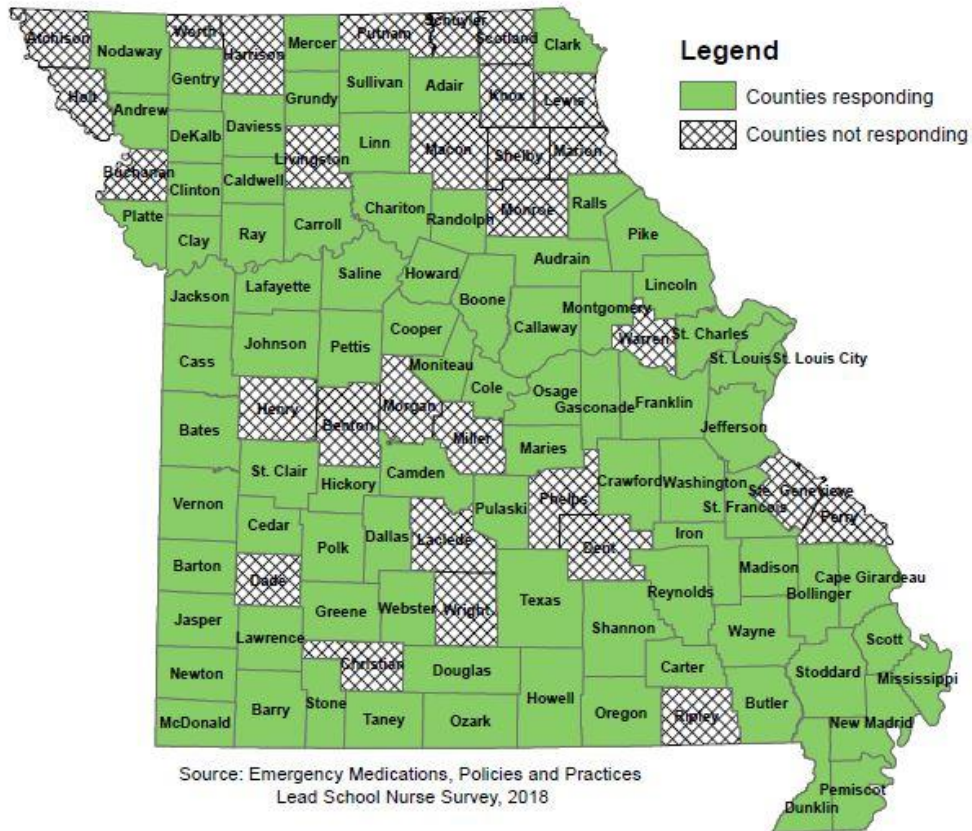
Between February 28 and March 15, 2018, the Missouri School Program distributed a brief web-based survey via email to 475 lead school nurses through the State School Nurse Consultant. After two weeks of data collection, the project staff reviewed the data and closed the survey.



# Responding School Districts

At the close of the data collection phase, completed surveys reported data for 191 of the 475 surveys sent to lead school nurses, yielding a total response rate of 40.2%. However, based on the school district county as defined by the Missouri Department of Elementary and Secondary Education (DESE), responding school districts represented 85 counties and the City of St. Louis (or 74.8%) of Missouri's counties (Figure 1) and accounted for approximately 442,244 students (50.0%) enrolled in public school districts during the 2016-2017 school year.<sup>2, 3</sup> In addition, the sample included reporting from a small number of parochial, specialty (blind, deaf or disabled), charter, and private school systems (n = 5). Registered nurses (83.3%) and licensed practical nurses (13.6%) predominantly completed the survey with a small proportion completed by health room aides (3.1%).

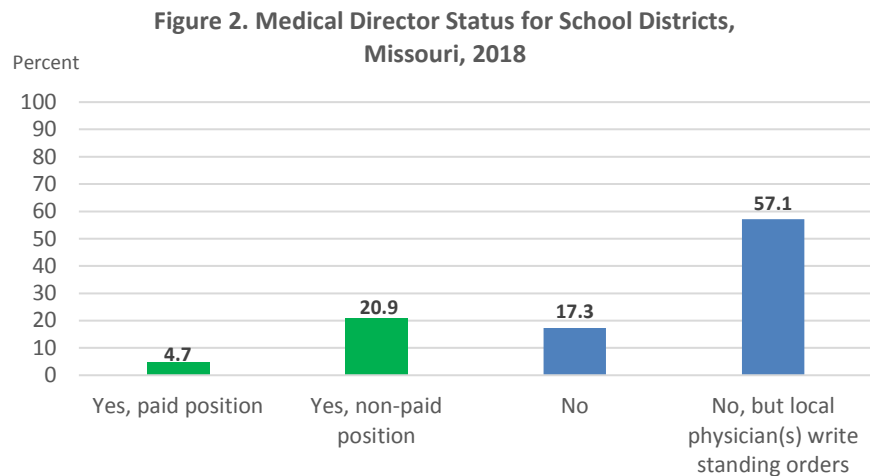
Figure 1. Lead School Nurses Responding to Emergency Medications, Policies and Practices Survey by County, Missouri, 2018



# Findings

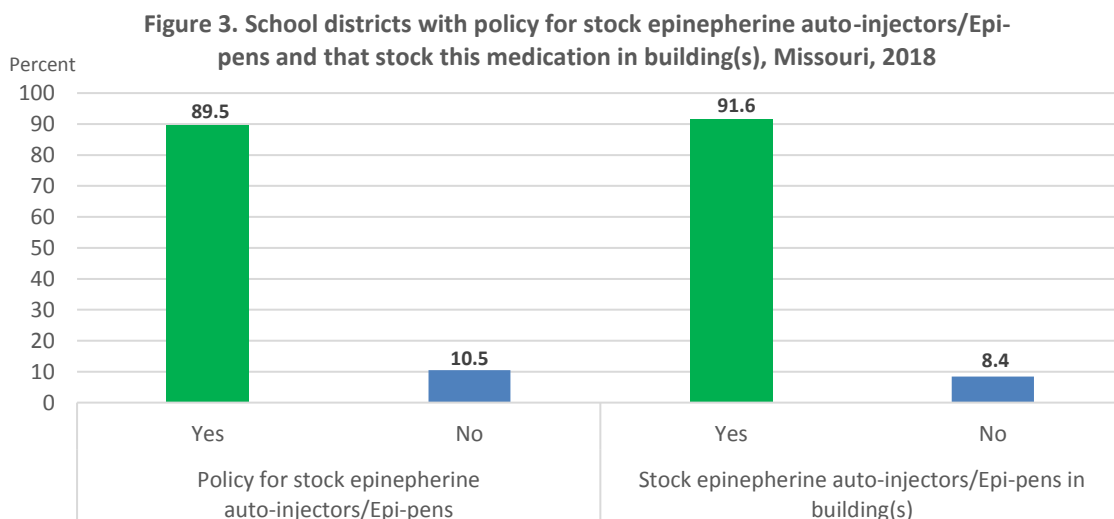
## *Medical Director*

A small proportion of the reporting school districts report that they have a medical director for the school district that is a paid position (4.7%) and about one in five districts (20.9%) have a medical director, but it is not a paid position. More than one-half (57.3%) of nurses reported that while they do not have a medical director for their district, they have local physician(s) that write standing orders (Figure 2).



## *Epinephrine / Epi Pens*

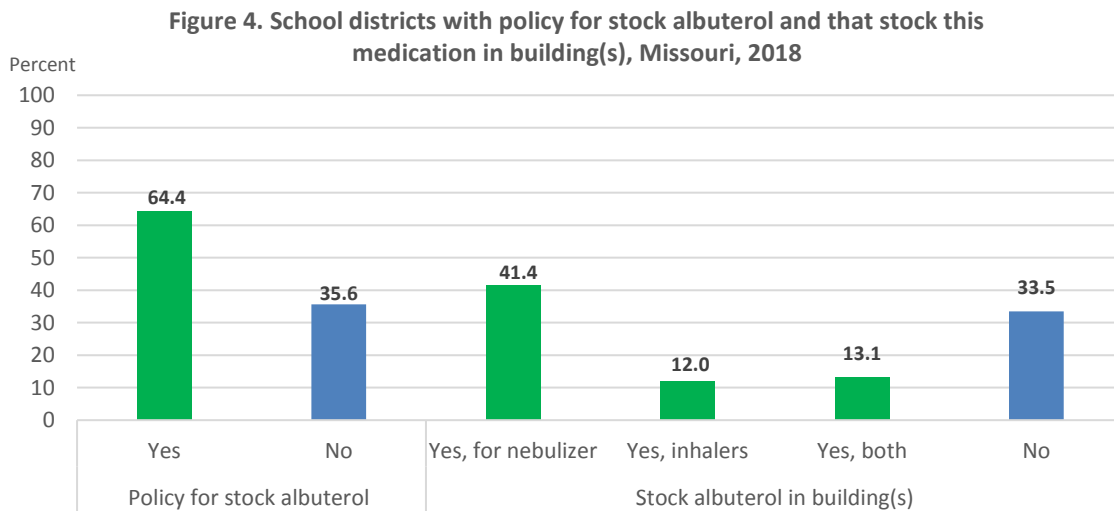
A large proportion of lead school nurses reported a policy for stock epinephrine auto-injectors/Epi-pens in their districts (89.5%) with the majority maintaining a stock supply in buildings (91.6%) (Figure 3).





## Albuterol

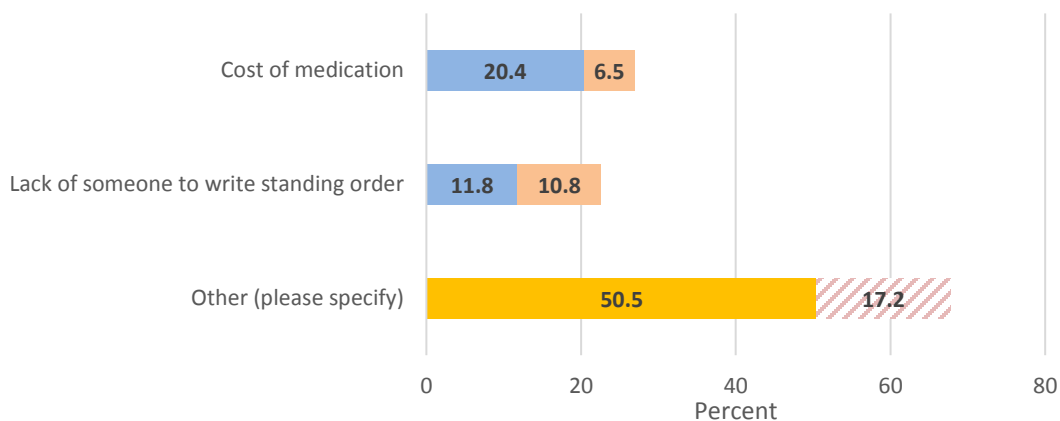
Six out of ten (64.4%) school nurses reported a policy for stock albuterol in their district (Figure 4). The majority of lead school nurses reported maintaining a stock supply of albuterol (66.5%) either with a nebulizer (41.4%), inhalers (12.0%), or both (13.1%). However, slightly more than one-third of the nurses indicated their district had no albuterol policy (35.6%) and one-third (33.5%) did not stock albuterol in the building(s).



## Barriers to Stock Emergency Medications (albuterol and Epi-pens)

The lead nurses were asked, “if you do not have stock emergency medications...is it related to.” Some of the nurses chose the options – blue portion of bar (Figure 5), but the majority chose “other” and added comments of which 17.2% mentioned the two options (beige portion). Combining the options and comments, about one-fourth (26.9%) of the nurses indicated it was due to cost, followed by the lack of someone to write the standing order (22.6%), and the

**Figure 5. Reasons for not having stock emergency medications for asthma (albuterol) or life threatening allergies (Epi-pens), Missouri, 2018 (n = 93)**





remainder (50.5%) cited other reasons including:

- Student's provide their own (n = 5)
- Lack of a nurse or other medical person in the building / liability (n = 4)
- Close proximity of emergency services (n = 3)
- Parent needs to provide medication or approve the medication use (n =3)
- Not sure or unaware of the need (n = 3)
- New to position (n =2)
- Fear of adverse reaction to medication (n = 1)



*“Cost of medication, inability to find someone to write for standing order and we’ve not had any instances to need albuterol”*

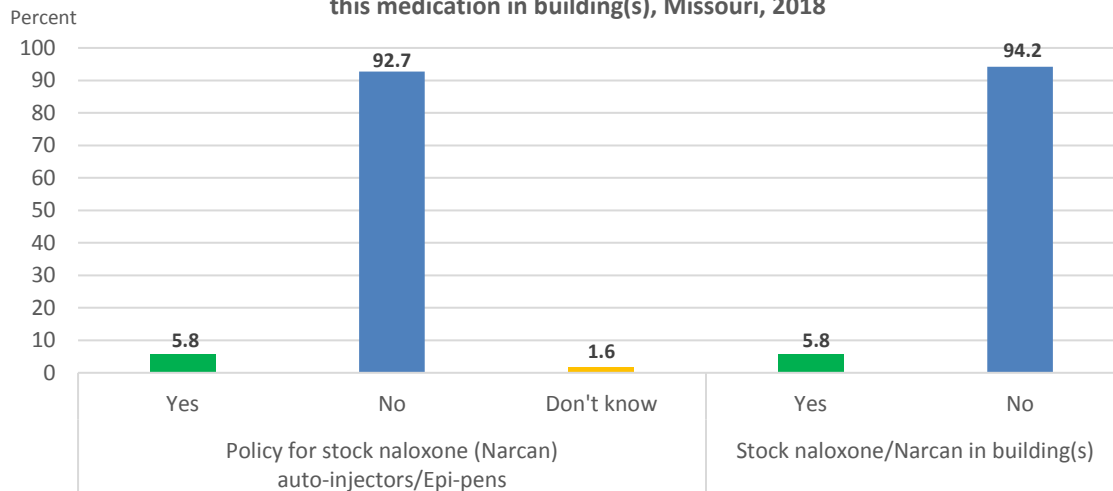
*“We are only able to keep epi-pens because of a grant. Otherwise, we wouldn’t have it.”*

Lead School Nurses

### ***Naloxone (Narcan)***

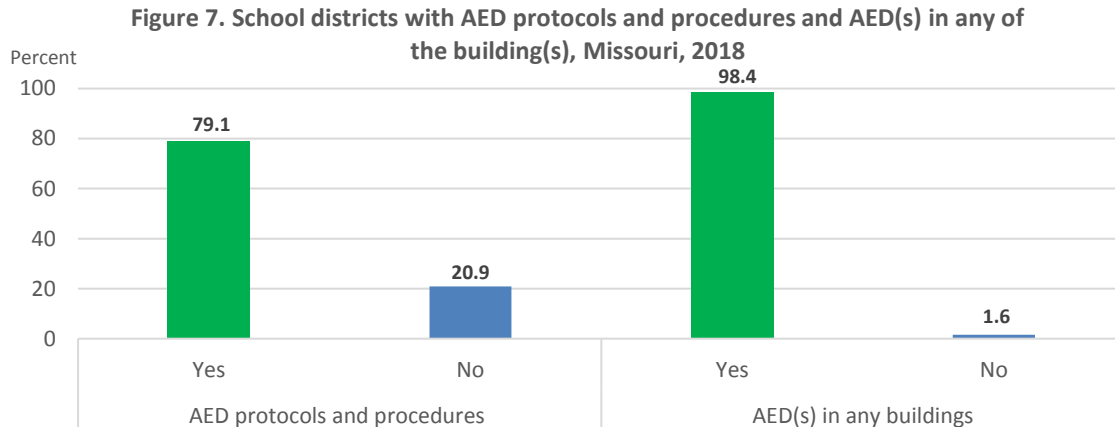
The majority of lead school nurses indicated their districts do not have a policy for stock naloxone (92.7%) and that they do not stock naloxone in the school buildings (94.2%) (Figure 6). When asked, if training were available, would you/the school district be interested in having stock naloxone/Narcan in any of your buildings? Almost one-half of the nurses responded “yes” (49.7%), they would be interested if training were available.

**Figure 6. School districts with policy for stock naloxone/Narcan and that stock this medication in building(s), Missouri, 2018**



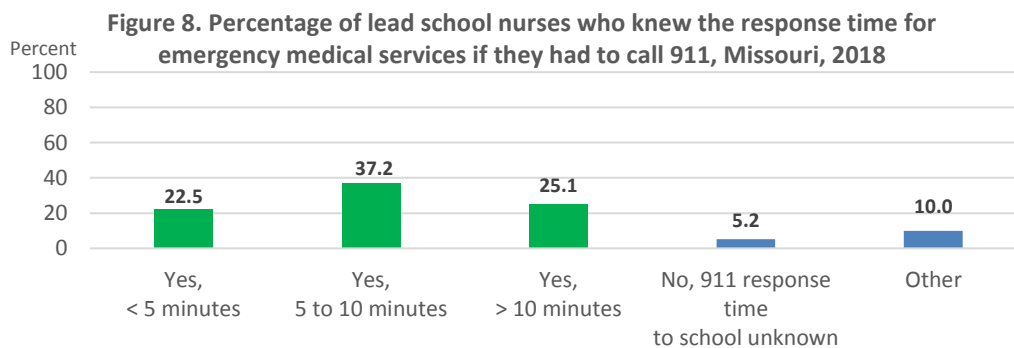
## Automated External Defibrillator (AED)

Almost eight out of ten lead school nurses (79.1%) indicated the school districts had AED protocols and procedures (Figure 7). However, almost all the nurses (98.4%) indicated they were aware of AED(s) in school buildings in their district. A wide variety of school personnel and external partners are responsible for user/staff training and defibrillator maintenance. Frequently the nurse or designee is responsible for daily to monthly checks on the equipment and pad replacement, and maintenance and training is by the ambulance district, cardiopulmonary resuscitation (CPR) instructors, or emergency medical services. Some districts use others such as their administrative or health coordinator/services staff, health or physical education teachers, local health department, voluntary agencies, and security/maintenance staff for maintenance and trainings. A small number of schools also have sudden cardiac arrest teams and cardiac science staff that maintain the equipment and conduct trainings.



## Emergency Medical Services

Approximately one in five lead nurses (22.5%) estimated the response time for 911 emergency medical services to their school as less than 5 minutes. The remainder estimated the time as greater than 5 minutes, was unknown, or commented that it varied depending on building location and whether the ambulance was on another call, but first responders often arrived quickly.



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# Conclusion

Only a small proportion of the school districts have a paid medical director, but more than one-half of the districts utilize local physicians to write standing orders. There has been greater adoption of HB 1543 (i.e., maintaining a supply of prefilled auto syringes of epinephrine for anaphylactic reaction) than of HB 1188 (i.e., maintaining a stock supply of albuterol). This is demonstrated in the development of protocols (89.5% for epinephrine vs. 64.4% for albuterol) and in maintaining stock supplies of these medications (91.6% vs 66.5%, respectively). The greatest barriers to stocking the emergency medications were cost and lack of someone to write the standing order. Currently, very few school districts have protocols or stock naloxone. However, approximately one-half of the nurses (49.7%), would be interested in stocking naloxone if training were available. In contrast, almost all the school districts represented in the study have AEDs in their buildings that they maintain and receive training for on a routine basis. The 911 response time to many of the schools was felt to be greater than five minutes, but often first responders arrived more quickly.

In summary, while a large proportion of school districts participating in the survey are maintaining stock supplies of epinephrine and albuterol, a portion or not (i.e., 8.4% for epinephrine and 33.5% for albuterol). This represents a substantial number of children not covered for one or more of these conditions. It is unknown what proportion of the non-response school districts have implemented emergency medication policies and maintain stock supplies of these medications. However, if similar to these results, a sizeable number of children may be at risk of life-threatening conditions in which some schools are inadequately prepared to address and emergency medical services would not be able to reach before irreversible damage has occurred. Efforts are needed to increase adoption of emergency medication protocols, address barriers to maintaining stock supplies of these medications, and ensure that every nurse is aware of the response time of 911 emergency services to their buildings.

# References

<sup>1</sup> American Academy of Pediatrics, Council on School Health. Medical emergencies occurring at school. *Pediatrics*, 2008;122(4), <http://pediatrics.aappublications.org/content/122/4/887>

<sup>2</sup> Missouri Department of Elementary & Secondary Education. Missouri School Directory. Jefferson City, MO. <https://dese.mo.gov/school-directory>

<sup>3</sup> Missouri Department of Elementary & Secondary Education. Statistics of Missouri Public Schools. Jefferson City, MO. <https://dese.mo.gov/school-directory>

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This evaluation project was made possible through a collaboration of the school districts, nurses and staff, the Missouri Department of Health and Senior Services, and partners. The following individuals made important contributions to the development and implementation of the project, including survey design, survey administration, data analysis, and report writing.

Marjorie Cole, MSN: State School Nurse Consultant  
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Sherri Homan, FNP, PhD: Public Health Epidemiologist  
Missouri Department of Health and Senior Services



# Appendix

## Missouri Revised Statutes

### **Chapter 167 Pupils and Special Services**

#### **Section 167.630.**

**August 28, 2010**

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#### **Epinephrine prefilled auto syringes, school nurse authorized to maintain adequate supply**

1. Each school board may authorize a school nurse licensed under chapter 335 who is employed by the school district and for whom the board is responsible for to maintain an adequate supply of prefilled auto syringes of epinephrine with fifteen-hundredths milligram or three-tenths milligram delivery at the school. The nurse shall recommend to the school board the number of prefilled epinephrine auto syringes that the school should maintain.

2. To obtain prefilled epinephrine auto syringes for a school district, a prescription written by a licensed physician, a physician's assistant, or nurse practitioner is required. For such prescriptions, the school district shall be designated as the patient, the nurse's name shall be required, and the prescription shall be filled at a licensed pharmacy.

3. A school nurse or other school employee trained by and supervised by the nurse shall have the discretion to use an epinephrine auto syringe on any student the school nurse or trained employee believes is having a life-threatening anaphylactic reaction based on the training in recognizing an acute episode of an anaphylactic reaction. The provisions of section 167.624 concerning immunity from civil liability for trained employees administering lifesaving methods shall apply to trained employees administering a prefilled auto syringe under this section.

(L. 2006 H.B. 1245, A.L. 2010 H.B. 1543)

Missouri Revised Statutes

**Chapter 167  
Pupils and Special Services**

**Section 167.630.1**

**August 28, 2012**

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**Asthma-related rescue medications, school nurse may be authorized by school board to maintain, procedure.**

167.635. 1. Each school board may authorize a school nurse licensed under chapter 335 who is employed by the school district and for whom the board is responsible to maintain a supply of asthma-related rescue medications at the school. The nurse shall recommend to the school board the quantity of medication the school should maintain.

2. To obtain asthma rescue medications for a school district, a prescription written by a licensed physician, a physician's assistant, or nurse practitioner is required. For such prescriptions, the school district shall be designated as the patient, the nurse's name shall be required, and the prescription shall be filled at a licensed pharmacy.

3. A school nurse or other school employee trained by and supervised by the nurse shall have the discretion to use asthma-related rescue medications on any student the school nurse or trained employee believes is having a life-threatening asthma episode based on the training in recognizing an acute asthma episode. The provisions of section 167.624 concerning immunity from civil liability for trained employees administering lifesaving methods shall apply to trained employees administering an asthma-related rescue medication under this section

(L. 2012 H.B. 1188)