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Stock Epinephrine Auto-Injectors in Schools

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Stock Epinephrine Auto-Injectors in Schools

With the increasing rise in food allergies that can be potentially life threatening, it is becoming extremely important that schools be prepared to handle such emergency situations. Among school age children, 1 in 25 students has a food allergy and 30-50% of those allergies will induce an anaphylaxis emergency (Zacharski, DeSisto, Pontius, Sheets, & Richesin, 2012). What is scary is that these are statistics of children with known food allergies. However, it is estimated that 25% of students that have an anaphylactic reaction had previously no known allergies (Zacharski et al., 2012). In dealing with anaphylactic emergencies, it is the schools responsibility to plan and be prepared to handle situations. The school nurse takes the lead in managing student's health needs, educating school staff, and providing a safe learning environment for students (Zacharski et al., 2012). So, does the presence of stock epinephrine auto injectors in schools reduce the complications school age students experience in the event of an anaphylactic emergency?

In a research study, California school nurses were surveyed to determine "experience with life-threatening anaphylaxis, implementation of allowable stock epinephrine auto-injector programs, and barriers to program implementation" (Morris, Baker, Belot, & Edwards, 2011, pp. 471-472). Some interesting facts that the article presented included that 73% of the school nurses reported that they had student with known allergies in their schools with 52% of those nurses having students that can self-carry their epinephrine auto-injectors (Morris et al., 2011). Additionally, 30% of the school nurses surveyed had at one time used another student's prescribed rescue medication for the use on another student during an emergency (Morris et al., 2011). Lastly, 72% of the school nurses reported that there were students in their schools that had known allergies or previous use of epinephrine who had parents that did not supply the

school with the proper medication to treat their child's allergic reaction (Morris et al., 2011). Epinephrine auto-injects if stocked in schools could allow school nurses to use them in case a student happened not to be carrying theirs or if a student with an unknown allergy had a reaction and especially if parents did not provide proper medication in case of a reaction. In all of these situations the school nurse's immediate recognition and administration of epinephrine could prevent deaths or serious injury to students (Morris et al., 2011).

Reliability deals with the consistency in measurement methods within a study (Grove, Gray, & Burns, 2015). In critiquing the reliability of the Morris et al. (2011) article, they used a 41 question survey that looked at the "attitude, knowledge, and preparation of schools for anaphylaxis" (Morris et al., 2011, p. 473). The survey was developed specifically by these authors so that their research questions could be answered. The pilot study was done to ensure the ease of administering the survey and found no difficulties (Morris et al., 2011). "Cronbach's alpha was .93 indicating strong internal reliability" (Morris et al., 2011, p. 473). The surveys were collected anonymously in two ways either online through email or in person at the 2007 CSNO state conference both using OnSurvey (Morris et al., 2011). So the Morris et al. (2011) article was reliable in both its data collection and measurement methods.

Validity deals with determining "how well the instrument reflects the abstract concept being examined" (Grove et al., 2015, p. 290). In critiquing the validity of the Morris et al, (2011) article, a cross-sectional, descriptive design was used to conduct their study. The study looked to "examine existing trends of care, highlights areas of concern, and identifies topics what would benefit from further study" as it related to the care and treatment of anaphylaxis (Morris, et al., 2011, p. 472). For the 41 question survey the authors created, they had a panel of experts

review each question to determine content validity (Morris et al., 2011). So the Morris et al. (2011) showed validity in its research design and measurement methods.

In looking at the Morris et al. (2011) article there were weaknesses and strengths that stood out in their study. A weakness within the study was the authors conducted their study using a convenience sample of only California certified school nurses (Morris et al., 2011). In using the convenience sampling method to obtain their population, it limits the author's ability to control for biases (Grove et al., 2015). A strength within the study was the authors ability to create a survey that had a Cronbach's alpha of .93, especially since this was the first time this survey had been used in a study besides their pilot study (Morris et al., 2011). Having a Cronbach's alpha so close to 1.0 means there was strong internal consistency and less random error among their survey meaning it would have strong reliability (Grove et al., 2015).

In the *Voluntary Guidelines for Managing Food Allergies in Schools and Early Care and Education Centers* on the Center for Disease Control website it emphasized the importance of the school nurse being able to recognize how children might describe their symptoms if they are having an allergic reaction. Children might say things itch, feel funny, there are bugs crawling in their mouth or ears, or even that is in the back of their throat ("Centers for Disease Control and Prevention", 2013). Having the school nurse be able to identify symptoms alone is not enough having access in schools to the recommended treatment for anaphylaxis (which is epinephrine) can help to increase a student's ability to survive an allergic reaction and recover quickly ("Centers for Disease Control and Prevention", 2013). The school nurse needs to be able to identify students with allergies and create emergency actions plans for them, provide training for school personal, make sure epinephrine auto-injectors are easily accessible in case of emergency,

and create an environment that is safe for all students ("Centers for Disease Control and Prevention", 2013).

As food allergies are on the rise among children, being prepared to handle emergencies in schools is becoming increasingly important. It is estimated that it could cost a school $100 to stock two epinephrine auto-injectors yearly as they would need to be replaced due to expiration if not used (Gregory, 2012). School nurses and school staff should not hesitate to administer epinephrine because of its side effects or liability if something goes wrong. "Epinephrine's side effects such as anxiety and palpitation, are not harmful for the average, healthy child" (Gregory, 2012, p.224). As long as a school nurse or staff member is acting in good faith when administering the epinephrine auto-injector they should not be held liable for civil damages (Gregory, 2012). Lastly, the article stressed "stock epinephrine laws nationwide will enable school nurses to treat anaphylactic emergencies promptly, and could potentially save lives" (Gregory, 2012, p.225). So with the presence of stock epinephrine auto injectors in schools the complications during an anaphylactic emergency could be prevented.

In conclusion, does the presence of stock epinephrine auto injectors in schools reduce the complications school age students experience in the event of an anaphylactic emergency? With proper training of school nurses/staff and stocking of epinephrine auto-injectors in schools, allergic reaction emergencies students experience at school can be treated immediately and potentially save lives (Gregory, 2012). A recommendation that could be made for school nurses would be the ability to receive more specialized training in recognizing and treating anaphylactic reactions in the school setting. This would be beneficial to school nurses because early recognition and treatment of anaphylactic reactions can help prevent deaths (Morris et al., 2011).

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