

DOCUMENT RESUME

ED 431 759

SP 038 627

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TITLE Learning the ABC's Can Save a Life. Why Classroom Teachers Should Be Certified in CPR and Pediatric First Aid.
PUB DATE 1999-00-00
NOTE 18p.
PUB TYPE Reports - Descriptive (141)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cardiopulmonary Resuscitation; Child Health; Elementary Secondary Education; *First Aid; Health Promotion; Inclusive Schools; Mainstreaming; School Accidents; *School Safety; Special Needs Students; Students; *Teacher Responsibility; Teachers

ABSTRACT

This paper explores the rationale for why classroom teachers should be certified in cardiopulmonary resuscitation and pediatric first aid. It begins by introducing a scenario of two fatal tragedies in a school setting. It also examines a study done of teachers and school aides in inclusive classrooms and their concerns about health and safety issues. The paper touches upon the history of cardiopulmonary resuscitation (CPR), legal concerns, the mechanics of CPR, and a review of potentially fatal medical emergencies that could occur in an ordinary classroom setting. These emergencies include asthma, diabetes, seizure disorders, cardiac arrest, and severe allergic reactions. The paper discusses basic pediatric first aid, explaining that it should include, but not be limited to, a variety of potential emergencies. Finally, the paper recommends that all those who are directly responsible for the care and safety of children in schools or child-care settings should be certified in pediatric first aid (including CPR). Teachers should be recertified every 2 years. There should be clearly defined emergency procedures posted at visible locations throughout the school. (Contains 12 references.) (SM)

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Learning the ABC's can save a life. Why classroom teachers should be certified in CPR and pediatric first aid?

By Evelyn Delgado

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Abstract

This article explores the rationale for why classroom teachers should be certified in cardiopulmonary resuscitation and pediatric first aid. It introduces a scenario of two fatal tragedies in a school setting. It examines a study done of teachers and school aides in *inclusive* classrooms and their concerns about health and safety issues. It also touches upon the history of CPR, legal concerns, the mechanics of CPR, and a review of potentially fatal medical emergencies that could occur in an ordinary classroom setting.

Introduction

In New York City, on Feb. 29, 1996, nine-year-old Ciera Santiago choked on a hot dog in the lunchroom of her elementary school in East Harlem and died shortly afterwards. It was reported that two parent volunteers in the lunchroom performed the Heimlich maneuver in an attempt to dislodge the obstruction. When their attempts failed, they proceeded to escort the child up two flights of stairs to the nurse's office. The child collapsed on the stairs. In a similar case five years earlier, Elizabeth Garcia, a seventh grader at Intermediate School 292 in East New York, choked to death while eating a hot dog. The child's mother was awarded \$1 million last October by a jury that found that teachers and a school aide were negligent for not helping the girl (The New York Times, 1996, p.2).

Rationale for CPR and first aid training

The child-care setting is a vital part of the child's daily living experience. As teachers, not only are we consigned to promoting their social, emotional, cognitive, and physical development, but we are also entrusted with their care and

safety while they are with us. Unfortunately, no matter how safety-conscious a teacher is, accidents and medical emergencies still do occur.

According to the National Safety Council, “Every year, one out of four people sustains injuries serious enough to require medical attention (National Safety Council, 1995, p.1).” In addition, “Accidents are the leading cause of injury and death among children the ages of one to fourteen (Zand, et al, 1997, p.2).” Most school related injuries are minor and require only first aid care. But it is highly possible that one day you may be required to handle a medical emergency. Knowing what to do and the confidence to do it may help save a life.

According to the American Red Cross’ *Standard First Aid & Personal Safety* manual,

“The limitation of time in case of accident or sudden illness may be so critical in terms of minutes, or even seconds, that only a person with first aid knowledge and skills who is at hand has any opportunity of preventing a fatal outcome (American Red Cross, 1979, p.12).”

In order to ensure the safety of the children, teachers need to be trained in handling emergencies.

The Inclusive Classroom

As Maryjane O’Malley pointed out in her review for Nursing Scan in Research,

“Public law 101-476 is a federal mandate that promotes the education of all children within their community school system. Educators are being asked to teach as well as care for medically

fragile children, often with little or no training (O'Malley, 1994, p.8).”

She further acknowledged that,

“...91% of respondents [teachers and school aids] indicated that they had contact with a medically fragile child in their classroom.” The study she reviewed went on to identify the concerns of the teachers and school aides (O'Malley, 1994, p.8).”

They expressed “...the need for education related to giving medical procedures, safety concerns, and the need for CPR training (O'Malley, 1994, p.8).”

The study concluded that... “The fear of not knowing how to care for the child in an emergency or even day-to day will impede both the education and emotional well-being of the child and school system (O'Malley, 1994, p.8).”

History of CPR

One of the most important discoveries of modern medicine is that “sudden death” can be reversed. In 1960 researchers in Baltimore found that compressing a victim’s chest could cause blood to circulate and, along with rescue breathing, could help to sustain life for a brief period of time after pulse and breathing had stopped. CPR that is performed properly and promptly, i.e. before “sudden death” has resulted in final, biological death, can give victims the time to receive treatment by advanced medical techniques.

More astonishing is the realization that this miracle of science may be brought about by any of us anywhere, using only our hands, lungs, and brains. In 1973, the American Heart Association cosponsored a national conference at which cardiopulmonary resuscitation (CPR) was identified as a first-aid procedure that should be taught to the general public on a national scale. Properly performed CPR can save between 100,00 and 200,000 lives each year in the United States, especially if advanced life support is also available (American Heart Association, 1987, p.2).

Legal Concerns

The decision to help someone in most cases is strictly up to one's own discretion and is not usually required by law. However, as a schoolteacher you may be required by your state or local laws to give first aid. This is known as a "duty to act." In the opening scenario, the courts deemed that school personnel had a duty to act and found them negligent for failure to doing so.

Another issue that must be addressed is the concept of abandonment. Once you start giving first aid in any situation, you must be aware that you are legally bound to remain with the victim until you turn the victim's care over to an equally or better trained person or the emergency medical services (EMS). Failure to do so is called abandonment. Abandonment in this situation means negligence and it can also lead to an award of damages by a court. Fear of lawsuits has made people

wary of getting involved in emergencies. However, Good Samaritan laws cover laypersons serving as first-aiders that are acting in good faith.

Lastly, the issue of consent needs to be clarified. In all schools, consent is usually given by the parents in the beginning of the school year and is included in the school record. When a minor is injured and parents or guardians are not readily available, it is “implied” that a parent or guardian would give consent for a first-aider to render help without their expressed consent (National Safety Council, 1995, p.2).

Mechanics of CPR

CPR combines rescue breathing and external chest compressions. Proper and prompt CPR serves as a holding action until advanced medical help can be provided. There are three basic rescue skills involved- the ABC’s of CPR: (A) establishing an airway, (B) rescue breathing, and (C) circulation. Each includes an assessment, which must be followed by appropriate action.

To better understand how CPR can sustain life, consider these two definitions of death:

- Clinical death means that the heartbeat and breathing have stopped. This is best thought of as apparent death and it may be reversed. *Sudden death* is sudden, unexpected clinical death
- Biological death is permanent brain death due to a lack of oxygen. This is not reversible. (*American Heart Association, 1987, p.4*)

During the first few minutes of clinical death, CPR may prolong the onset of biological death. Without CPR, permanent death will occur. According to the American Heart Association,

“When CPR is started within 4 minutes, the victim’s chances of leaving the hospital alive are four times greater than if the victim did not receive CPR until after 4 minutes (*American Heart Association, 1987, p.5*).”

Injuries account for approximately 44% of deaths in children from 1 to 14 years of age (Scipien, 1990, p.238). Over 90% of deaths from choking by foreign obstructions in the pediatric age group occur in children younger than 5 years of age, and 65% are in infants. Thus, teachers need to know how to manage airway obstruction due to foreign bodies, such as food and other small objects. Other situations that may necessitate CPR in infants and children include suffocation, smoke inhalation, and infections and ingestion of toxic substances.

Potentially Fatal Illnesses

The following emergencies were taken from the Regional Emergency Medical Services Council of New York, Inc.(1997). They were provided to illuminate the possible situations that can occur during a normal school year.

Asthma

It is springtime and pollen is blowing with the wind. A ten-year-old student in the class is having some difficulty breathing and is coughing a lot.

When asked how he is, the student says that he is having some trouble breathing.

What should you do?

According to the American Lung Association, asthma is the seventh-ranked chronic health condition in the United States and the leading chronic illness of children. It is an acute inflammatory disease that makes airways (bronchial tubes) particularly sensitive to irritants. During an asthma attack, tightening of the smooth muscle around the bronchial tubes causes them to become inflamed, narrow inside and produce excess mucus. This makes it difficult for air to pass in and out of the lungs and decreases the oxygen levels in the blood. A person suffering from an asthma attack feels like they are drowning. Symptoms of asthma include breathing difficulties, coughing, and wheezing.

Asthma is the leading cause of school absenteeism due to chronic illness. About 4,000 people die from asthma attacks each year and more than 80% of them are children (Environmental Health Center, 1998, p.1).

Diabetes

A 7-year-old male was diagnosed with insulin dependent diabetes this past summer. Upon return to school, his parents informed his schoolteacher and administrative office of his diabetes. He brings lunch and two snacks to school each day. At 11:00am today he is sitting at his desk in class looking as if he is daydreaming. The teacher questions him, but he does not respond. His look is

distant. Feeling as if something is not right, the teacher approaches the child and asks him if anything is wrong. He speaks a few unintelligible words and falls unconscious to the floor. What do you do?

Each year an increasing number of youngsters, aged 10 to 14, are diagnosed with diabetes. Diabetes occurs when the body does not produce enough insulin to maintain normal blood-sugar levels or when the insulin that is produced is ineffective. There are various symptoms associated with diabetes. To ignore these symptoms may lead to a coma or shock. Insulin shock can quickly lead to cardiac arrest and death.

Seizure disorders

You walk down the hall in school and see a group of students gathered around a student on the floor. One of the students comes to you and says that there is a student “shaking all over.” You look at the student on the floor and he appears to have some bleeding from the lip. He is still shaking and has foam coming from the mouth. What do you do?

A seizure is a very frightening sight. The seizure itself is usually not life threatening. However, trauma that can be sustained during the seizure can potentially be life threatening. Common definitions of terms associated with seizure disorders are:

- Seizure- an isolated event from an abnormal electrical discharge in the brain
- Epilepsy- the tendency to have recurrent seizures
- Convulsions- a seizure with a change in muscle or motor activity
- Generalized convulsion- a seizure involving the entire body and is associated with the loss of consciousness
- Focal seizure- a seizure involving one area of the body not necessarily associated with an altered mental state
- Petit mal seizure- extremely brief period of loss of consciousness without loss of muscle tone, which are more common in children.

Causes of seizures in children are:

- Infections- encephalitis, meningitis, roseola, shigella
- Metabolic disorder- hypoglycemia, hypoxia, fever, hypocalcemia
- Toxic substances- lead, aminophylline, lidocaine, cocaine, nicotine, phenothiazine, drug withdrawal, especially from a prescribed anticonvulsant
- Structural problems- traumas, bleeding, mass lesion, or scar in the brain.

Cardiac arrest

Cardiac arrest in infants and children is rarely a sudden event. It is often the result of a progressive deterioration secondary to another medical incident. The major events that may necessitate CPR in children include injuries, suffocation caused by foreign objects (toys, foods, plastic covers, etc.) smoke inhalation, sudden infant death syndrome, and infections (epiglottitis and croup). Foreign-body obstruction should be suspected in infants and children who demonstrate the sudden onset of respiratory distress associated with coughing,

gagging, stridor (a high pitched, noisy sound), or wheezing. Signs and symptoms of airway obstruction may also be caused by infections such as epiglottitis and croup, which produces airway edema. Infections should be suspected as the cause of airway obstruction if the child has a fever, particularly if accompanied by congestion, hoarseness, drooling, lethargy, or limpness.

Children with an infectious cause of airway obstruction must be taken immediately to an emergency facility. Time should not be wasted in a futile and probably dangerous attempt to relieve this form of obstruction. Relief of airway obstruction should be attempted only if signs of complete airway obstruction are observed (American Heart Association, 1997, p.3-11).

Severe allergic reactions

While on lunchroom duty, a child who was eating suddenly tells you that she is having problems breathing. You ask her what happened and she tells you that she was eating “Peanut Butter Cups.” You look at her face and she has swollen eyes and lips. The child is having difficulty swallowing and is coughing weakly. What do you do?

Anaphylaxis is an allergic condition that results in the release of substances that can cause shock, and airway obstruction. The onset of this reaction can be extremely rapid and can result in death within minutes. The most common symptoms of an anaphylactic reaction involve the skin, respiratory,

circulatory, and gastrointestinal systems. This is in contrast to other common allergic reactions, such as hay fever, which cause mild or local symptoms. Although multiple agents can provoke anaphylaxis, the most common include certain drugs, foods and insects bites. Symptoms include anxiety, itching, sneezing, coughing, wheezing, cramping, abdominal pain, vomiting, diarrhea, swelling, hoarseness, loss of voice, and fainting. Physical signs include hives, angioedema, shock, rapid heartbeat, wheezing, shortness of breath, stridor, and cardiac or respiratory arrest (Henry, et al, 1992, pp.546-547).

Basic pediatric first aid

Trauma remains the leading cause of death and disability in the pediatric age group. Because the injured child has significant potential for full recovery, "...resuscitation must begin as soon as possible after injury, preferably at the scene (American Heart Association, 1997, p.8-1)." The first link of survival is the general public. For children this link includes school personnel who must be educated about the appropriate use of the EMS system.

"If the outcome for critically ill and injured infants, children, and young adults is to improve, all components must be integrated into existing EMS systems, and school personnel must be educated to activate EMS appropriately and to provide first aid and CPR until help arrives (American Heart Association, 1997, p.1-4)."

First aid is the immediate care given to an injured or suddenly ill person and teachers are usually the first responders in school. First aid does not take the

place of proper medical treatment. “It consists only of giving temporary assistance until competent medical care, if needed, is obtained or until the chance of recovery without medical care is ensured (National Safety Council, p.1).” Early childhood educators should seek a pediatric first aid course that is child specific and is designed to meet the needs of children.

According to the National Health and Safety Performance Standards, ST46, “...pediatric first aid training should include but not be limited to, the emergency management of;

- bleeding,
- burns,
- poisoning,
- choking,
- injuries (including insect, animal, and human bites),
- shock,
- convulsions or non-convulsive seizures,
- dental emergencies,
- head injuries,
- allergies reactions,
- eye injuries,
- loss of consciousness,
- electric shock,
- and drowning (National Resource Center for Health & Safety in Child Care, 1997, p.21).”

Many injuries and sudden illnesses can be cared for with minimal first aid intervention. For these and for situations requiring medical attention, it is a good idea to have useful supplies on hand for medical emergencies. There should be two first aid kits: one that remains in the classroom and one for field trips and outdoor play.

Recommendations

I believe that it is imperative that all those who are directly responsible for the care and safety of children in schools or child care settings be certified in pediatric first aid, which includes rescue breathing, airway obstruction, and infant/child CPR. Because not all accidents can be prevented, knowing how to manage an emergency is a critical safety precaution.

It is essential for teachers to re-certify every two years because it is important to maintain skill proficiency. Improper CPR can result in cracked ribs or possible damage to internal organs.

There should be clearly defined emergency procedures posted at visible locations throughout the school building. Teachers should be aware of those emergency procedures before the emergency occurs. There is an assumption by teachers that medical emergencies are the health care provider's or school emergency responder's responsibilities. This *should not* be the case. The teacher is usually the first responder. In true medical emergencies, time is crucial. A

knowledgeable response could mean the difference between life and death. It is vital to know these procedures before they are needed.

Finally, I would strongly recommend regulation that would mandate the employer to provide for in-service training for educators to assist them in acquiring the skills necessary to properly care for someone in distress. The American Red Cross, the American Heart Association, and the National Safety Council offer excellent training in infant/child first aid and CPR. While these recommendations may seem standard for many in school and childcare settings, these are not the standard in many states.

Conclusion

In order to ensure the safety of all children in schools or child care settings there should always be a teacher or staff trained in recognizing and managing emergencies present at all times. It does not make sense to train staffs who are not present when an emergency occurs. As in the case of Ciera Santiago, had someone present been trained in airway obstruction they would have known to have the nurse come down to the lunchroom instead of walking her up two flights of stairs. Hot dogs are no longer served in NYC's public schools. However, teachers still are not required to be trained in medical emergencies.

Early childhood educators have a commitment to guarantee *all* children, regardless of their needs, a developmentally appropriate and inclusive curriculum

and practice. This includes modification of space, furniture and equipment to facilitate learning and activities. However more has to be done to address the issues of health and safety concerns of teachers in the inclusive classroom. As pointed out in the study, both teachers and their assistants feel woefully inadequate to handle medical problems in the classroom.

I hope that a teacher may never have to apply more than a Band-Aid or an ice pack on a child during her teaching career. However, should an emergency occur it is important to understand that children's injuries can be greatly reduced with knowledge of CPR and pediatric first aid. Understanding these skills and the confidence in applying them can be critically important to the outcome of any emergency. Better to be prepared than sorry.

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