Children Left Unattended Inside Vehicles: Let's Minimize the Risk.

Daniel Mikels

St. Lucie County Fire District, Port St. Lucie, Florida

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of other is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: _____

Date: 01/28/19

Abstract

The St. Lucie County Fire District (SLCFD) continues annually to respond to children being left unattended in vehicles. In 2017 alone, there were over 120 responses to this type of incident. It doesn't have to be "hot" outside either for a child to have an adverse reaction to being left unattended in a vehicle. The problem was the St. Lucie County Fire District (SLCFD) continues to respond to incidents involving children left unattended inside vehicles. The purpose of this research was to decrease the occurrence of incidents and minimize injuries involving children when left unattended inside vehicles. A descriptive methodology was used to guide the following research questions: (a) What is the frequency of incidents involving children left unattended inside vehicles in St. Lucie County? (b) What are the hazards to children being left unattended inside vehicles? (c) What level of awareness exists to the dangers of children being left unattended in vehicles? (d) What efforts could the St. Lucie County Fire District incorporate to reduce risks to children? The research lead to a review of literature, interviewing of subject matter experts, and a survey being submitted to all SLCFD personnel in both the operations and training and safety division. The findings identified temperatures are an everyday threat and the occurrences of children being left unattended are daily. The recommendations included: (a) increased training for SLCFD, (b) proper incident documentation and reporting, (c) developing response guidelines, and (d) maintaining external partnerships to increase public education.

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Children Left Unattended Inside Vehicles: Let's Minimize the Risk.

Introduction

The problem was the St. Lucie County Fire District (SLCFD) continues to respond to incidents involving children left unattended inside vehicles. The risk to a child being left unattended inside a vehicle is great. As soon as the air conditioning (A/C) is shut off, the interior temperature of the vehicle soon matches that of the outside air. "Cracking" a window has little to no effect on the interior temperatures of the vehicle (Null, 2018). One of the easiest explanations of children being left behind is that children, especially the smallest or youngest aren't able to remove themselves from these dangerous environments. Children are at greater risks to elevated temperatures because their bodies metabolize and heat up faster than adults. Hyperthermia sets in from body core temperatures increasing and from the inability to dissipate the heat (Tate, 2003). Since 1998, almost 800 children have died from pediatric vehicular heatstroke (Null, 2018). Florida ranks second, only to Texas, in the number of deaths related to pediatric vehicular heatstroke and ranks among the highest in the United States in per capita death tolls. The purpose of this applied research project was to decrease the occurrence of incidents and minimize injuries involving children when left unattended inside vehicles. Increasing awareness to the dangers for not only members of the SLCFD and the community will aid in attempts for positive change management. Descriptive methodology guided the following research questions: (a) What is the frequency of incidents involving children left unattended inside vehicles in St. Lucie County? (b) What are the hazards to children being left unattended inside vehicles? (c) What level of

awareness exists to the dangers of children being left unattended in vehicles? (d) What efforts could the St. Lucie County Fire District incorporate to reduce risks to children?

Background and Significance

The SLCFD is a special taxing district in the State of Florida and is the only agency authorized to provide: (a) fire prevention, (b) fire suppression, (c) emergency medical services (EMS), (d) rescue, and (e) other duties and responsibilities in St. Lucie County (St. Lucie County Fire District Charter 2004-407). The District is actually the most unique fire district in the State as it is the only one to cover an entire county, but it also serves the cities within those borders, Port St. Lucie, and Fort Pierce. The SLCFD is governed by a fire board of seven members. There are two members from each of the cities, two from the county, and a one appointed by the Governor of Florida. Reporting to the fire board are a (a) fire chief, (b) a clerk-treasurer, and (c) a district attorney. The fire chief is the chief operating officer (COO). This position develops a command staff and oversees the daily operations of the District. Services are provided from seventeen (17) fire stations, one stand-alone aero-medical base, and an administrative complex. Each station has at a minimum one fire suppression apparatus (engine/aerial), and one advanced life support capable transport unit (rescue). All sworn members are State of Florida certified firefighters and are either certified emergency medical technicians (EMT's) or paramedics. Regardless of station response area, advance life support treatments are available throughout the response area. In 2017 the district responded to over 52,000 emergency incidents with medical incidents making up the majority of responses; calls for service, especially medical continue to rise annually (SLCFD Annual Report, 2016). The District's Information Technology (IT) Director Derek Nicolette (personal communication, September 17, 2018 & December 12, 2018)

(Appendix A) was able to provide information that in 2017 the District responded to 128 incidents involving “children locked in vehicles” and so far as of December 2018 there were 124 of the same type of calls for service.

St. Lucie County Florida has a population of over 313,00 and is located along the Atlantic Ocean (U.S. Census, 2017). St. Lucie County is a part of the “Treasure Coast” region of Florida which includes Martin, Indian River, and Okeechobee counties. The U.S. Census (2017) also shows that St. Lucie County has experienced over a 13% increase in its population since 2010. Port St. Lucie ranks among some of the fastest growing cities in the country. In fact, it held the top spot in 2005 (Westbury, 2017). St. Lucie County’s growth rate and the number of persons under five years is tops among the Treasure Coast. Null (2018) finds since 1998, that the most at risk age group of persons under 14 are those under five years of age, but the average age distribution is 21 months. The growth is a huge issue the District must address as calls for service continue to rise. While three new rescue’s (ambulances) have been placed into service full time since 2016, there have not been any additional stations built since 2008. The main reason was the economic recession and reduction in Ad Valorem tax revenue. Ad Valorem tax revenue is the largest revenue stream for the District according to Staff Accountant Carl Trabulsy (personal communication, December 4, 2018) (Appendix B).

There is another reason as to why Florida and specifically St. Lucie County are experiencing such growth: climate. Weather Spark (para # 3, 2018) breaks down temperatures in St. Lucie County. For example,

> The ”hot season” lasts for 4.0 months, from May 26 to September 28, with an average daily high temperature above 86°F. The hottest day of the year is July 23, with an average high of 89°F and low of 75°F. The ”cool season” lasts for 2.8 months,

from December 6 to February 28, with an average daily high temperature below 76°F.

The coldest day of the year is January 18, with an average low of 55°F and high of 73°F. Findings show that the lowest of the numbers found in the "hot season" and much if not all of the averages of the "cool season" are well within the ranges where outside temperatures can rapidly heat up the interiors of vehicles (Auto Alliance, 2018).

This research is important to not only the District, but to other fire and emergency services agencies as it could identify risks to an at-risk population and provide avenues to reduce those risks. The research relates to the Executive Fire Officer (EFO) course, R274 *Executive Analysis of Community Risk Reduction" (EACRR).* "The goal of EACRR is to develop leaders in comprehensive multi-hazard community risk reduction" (National Fire Academy [NFA], 2018, p. 5). Furthermore, this research relates to the United States Fire Administration's (USFA) *Strategic Goals* as found in the 2014-2018 Strategic Plan. The research relates to goal one: Reduce Fire and Life Safety Risk Through Preparedness, Prevention, and Mitigation, and goal three: Enhance the Fire and Emergency Services' Capability for Response to and Recovery from All Hazards (United States Fire Administration [USFA], 2014, pp. 9-13).

Literature Review

The occurrence of child being left unattended in a vehicle happens is one that transverses the all segments of society and spans the geographic spectrum" (Johnson, 2010, p. 9). The occurrences of the District responding to children locked in vehicles was on pace with that of 2017 and might eclipse it (D. Nicolette, personal communication, December 12, 2018) (Appendix A). The District responded to over 120 child locked in vehicle incidents in 2017. Mr. Nicolette was able to pull this information based on call typing through the Computer Aided

Dispatch (CAD) system the District utilizes. How many of those calls actually turned out to be children locked in vehicles is an unknown however. There are two primary codes that should be utilized for documentation of a child locked in the vehicle within the National Fire Incident Reporting System (NFIRS). NFIRS is the largest and most comprehensive fire incident database in the world. During this author's on-site residency at the NFA campus, Mr. Marion Long, Fire Program Specialist (personal communication, December 12, 2018) (Appendix C) with NFIRS provided a brief overview and explanation of the NFIRS program. Mr. Long relayed that a common theme across the country was one of poor incident documentation and proper incident coding within NFIRS. Of the two coding options for a child locked in a vehicle, "331 Lock In" or "511 Lock Out," there were zero for the District in 2017. Mr. Long (personal communication, December 12, 2018) (Appendix C) was able to provide the numbers in 2017 for not only the State of Florida, but all reporting agencies across the country. In 2017, there were over 1,800 code 331 in Florida and over 30,000 across the country.

According to Mr. Long, poor data isn't just a District or a State of Florida problem. The National Fire Protection Association (NFPA) published a study in 2016 describing the many issues with NFIRS titled "NFIRS Incident Types: Why aren't they telling a clearer story." The NFPA study found even the study's authors disagreed on incident typing and coding (Kinsey & Ahrens, 2016). Some of the highlights from the executive summary include: (a) write coding in language common to firefighters, (b) simplify and limit coding choices, and (c) reorganize codes to operational categories instead of analytic categories to name a few (Kinsey & Ahrens, 2016, p 4). Jorge Rossi (2012), developed a report targeting incidents that involved children locked in vehicles to help improve his departments accuracy in tracking this specific incident type. Mr. Rossi's report was a requirement once all information was obtained and the incident was

completed. Information, but the correct information is essential for identifying problems and implementing solutions.

We've established that pediatric vehicular heatstroke can happen in most areas of the country throughout the year and can affect any of the youngest members of society. This only adds to the direction that regardless of the surrounding environmental factors, risks to children and anyone for that matter remain high if left behind in a vehicle (Auto Alliance, 2018). The risks to children are higher because of their inability to dissipate heat. In fact, a child's body has the ability to heat three to five times faster than and adult (Grayson, 2013). "Children especially infants, have accelerated metabolisms and abilities for their bodies to heat up, couple this with their bodies ineffectiveness to sweat and heat dissipation make hyperthermia and all stages of heat stress true medical emergencies" (E. Shaw, personal communication, December 12, 2018) (Appendix D). Dr. E. Shaw posits:

"the stages of heat stress are: (a) heat cramps, (b) heat exhaustion, and (c) heat stroke. All three stages of heat stress in the youngest populations are serious medical conditions, but heat stroke is the most serious as the body can no longer dissipate heat and core functions start shutting down. Once temperatures reach 104 degrees Fahrenheit, heatstroke can take place"

Reducing the risk is a course goal of EACRR (NFA, 2018). The ability to develop an understanding to the risk is key in risk reduction (Grayson, 2013). Gailbreath (2018) noted that a vehicles interior can heat up 20 degrees in 10 minutes, and that it takes mere minutes to reach dangerous temperatures. Gailbreath (2018, p. 38). Gailbreath added:

> A dark dashboard, steering wheel, and even child car seat can cause the temperature to reach more than 200 degrees due to the heath or air conduction and convection. The dashboard, steering wheel, and child car seat can also give off longwave radiation,

increasing the temperature. This causes rapid warming of the air trapped in the vehicle. Leaving windows slightly open does not significantly decrease the heat rate. (p. 38)

This goes to the early misconception Null's (2018) documents at the website *No Heat Stroke*, that cracking windows has little to no effect. Increased awareness to the dangers can potentially reduce the number of occurrences, but it can also increase the awareness of the community to recognize these situations and activate the 911 system. Calling 911 will get the needed resources through either law enforcement or through emergency medical dispatching (Gailbreath, 2018). As far as liability or fear of litigation, 16 states have laws protecting "Good Samaritans" who see a child in a car and take action in providing them assistance (Null, 2018). Again, No Heat Stroke by Jan Null has been tracking these issues since the late 1990's. What is interesting is that while 21 states have developed laws that deal specifically with children being left unattended in vehicles, there are more states that have laws that limit the ability for pets to be left unattended in the same vehicles (Null 2018). Florida is one of four states that while it has legislation attempting to protect children, there is a time requirement of 15 minutes or more that a child must be left unattended before it becomes a crime. The law of allowing 15 minutes places children at risk as temperatures rapidly rise inside a vehicle within a very short time frame (Gailbreath, 2018). Immediate activation of the 911 system is needed as waiting for 15 minutes could be potentially damaging due to dangerous temperature increases.

Procedures

Three interviews (Appendix A, D, G) and one survey were used to collect data. The survey (Appendix F) was developed and distributed via Survey Monkey. The survey (Appendix F) was distributed to District employees that were either in the operations division or training

and safety division. The rationale for those selections is that operations personnel are the individuals responding to the emergency incidents. They are the individuals who are seeing the effects from children being left unattended in vehicles and imputing the data into the report writing software. The training and safety division does not respond to emergency incidents, but policy development, EMS treatment and procedures, and report writing maintenance all fall under the umbrella of this division. The request for District members to complete the survey was sent via departmental email on October 9, 2018, with permission of Deputy Chief Martha Newport (personal communication, September 23, 2018) (Appendix E). The email was closed on October 30, 2018. There were 44 responses, just over one-tenth of the members emailed completed the survey. The survey asked four questions and on average took less than two minutes to complete.

The first question of the survey (Appendix F) asked if having a standard operating guideline (SOG) or policy for incidents involving children locked in vehicles would be beneficial. There isn't currently an SOG or policy that provides a "standard" approach across the seventeen fire stations and the three shifts of personnel. The second question asked if an engine/aerial, a suppression unit should respond on all incidents involving children locked in vehicles. At a minimum, a rescue unit responds to these incidents, but the suppression units not only provide for greater staffing when two units respond, they also have a much larger and more diverse array of tools and equipment for entry into locked vehicles. The third question addressed the NFIRS coding for children locked in vehicles and allowed for three coding choices. The previous two questions were "yes or no" choices, but the third question allowed for a more latitude. The fourth question allowed the members to select as many choices they felt appropriate

in regards to methods the District could incorporate to increase awareness to the dangers of children being left unattended in vehicles.

An interview was conducted with the District's IT Director Derek Nicolette (personal communication, September 17, 2018 and December 12, 2018) (Appendix, A). Mr. Nicolette has been with the District since 2005 and has been the Director of IT, which is a department head position for over five years. Mr. Nicolette was interviewed because he was the central figure behind the District's CAD software, report writing software, and the NFIRS reporting. If any changes are to be made to any of the abovementioned platforms, Mr. Nicolette would be involved. Mr. Nicolette was interviewed at the District's headquarters.

Dr. Erin Shaw, MD (personal communication, December 14, 2018) (Appendix, D) was interviewed to discuss the types of heat stress and the dangers heat stress can have on the body, focused primarily on our younger population. The interview started off with goal of asking questions to gain knowledge of Dr. Shaw's experience. Dr. Shaw graduated from the University of Toronto in 2010 with her Doctor of Medicine degree. She completed her family medicine residency training from Dalhousie University in 2012. In 2018, she followed up her traditional training with a certificate from the Institute of Integrative Nutrition. Dr. Shaw was interviewed in person on December 14, 2018) (Appendix D).

A third interview was conducted with Mrs. Brenda Stokes (personal communication, December 14, 2018) (Appendix G). Mrs. Stokes is the Executive Aide to the fire chief, but is also the Public Information Officer (PIO) for the District. Mrs. Stokes also was a manager at one of the St. Lucie County Boys and Girls Clubs centers before her employment with the District. Mrs. Stokes coordinates all press releases and social media posts as PIO. Furthermore, her duties as Executive Aide allow her to network and partner with external agencies both governmental

and non-governmental. The persons interviewed were considered relevant subject matter experts because of their training and certifications, or because of the roles and responsibilities. There were several limitations to the study. The survey and interviews with District members may have biased the responses on the topic. Finally, the low participation and survey responses could also have created limitations to the research.

Results

The first research question asked: (a) What is the frequency of incidents involving children left unattended in St. Lucie County? For the past two years the District has responded to over 120 incidents involving children being locked in vehicles. That is based off of the initial information that the emergency dispatchers receive when an emergency call comes into the 911 answering center. Based on what a dispatcher is presented with and our automated vehicle locators and CAD platforms the closest and most appropriate unit is dispatched (Derek Nicolette, personal communication, September 17, 2018) (Appendix A).

The second research question asked: (b) What are the hazards to children being left unattended inside vehicles? The hazards from being left unattended inside a vehicle are: (a) heat stress, (b) heat cramps, (c) heat exhaustion, and (d)heat stroke (Shaw, personal communication, December, 14, 2018) (Appendix D).

The third research question asked: (c) What level of awareness exists to the danger of children being left unattended in vehicles? From an organizational standpoint, the District members cited in the survey (Appendix E) overwhelmingly at 88% that a Standard Operating Guideline (SOG) for incidents involving children. An SOG would provide not only awareness, but uniformity in response as all members of the organization would be responsible for its

adherence. In regards to the awareness of properly documenting an incident involving a child locked in a vehicle over 86% of the members chose “331 Lock In”.

The fourth research question asked: (d) What efforts could the St. Lucie County Fire District incorporate to reduce risks to children? The results of the survey (Appendix E) showed that overwhelmingly members supported incorporating a SOG for incidents involving children locked in vehicles. Also, members backed using public service announcements and increasing our handouts of literature at fire stations and open houses. Mrs. Stokes (personal communication, December 14, 2018) (Appendix G) stated she would look to increase the outreach at open houses, but she noted that the District already has a partnership with the Department of Health where the District installs car seats. This is a monthly program where an individual calls into the Health Department and schedules a car seat installation. The District provides the trained car seat technicians and the installation site. Mrs. Stokes believes this time provides another opportunity to distribute a handout, but also identify tips or mechanisms to help ensure a child is not left in a back seat (personal communication, December 14, 2018) (Appendix G). Over 80% of the survey (Appendix E) results also showed that members would document an incident involving a child locked in a vehicle as a “331 Lock In.” Nicolette (personal communication, September 17, 2018) (Appendix A) stated that the new report writing software should provide: (a) a better NFIRS data extraction, (b) allow the District to track call typing, and (c) to better track incident location.

Discussion

The literature review, interview, and survey all demonstrated that the risk to children left unattended in vehicles is great year-round in St. Lucie County. This is true for the entire State of Florida as its weather helps it unfortunately rank second in regards to pediatric vehicular heatstroke's (Null, 2018). For St. Lucie County and while it is only two years of incident data, the District responds to a child locked in a vehicle once every third day (Nicolette, personal communication, September 17, 2018) (Appendix A). The calls (Appendix E) for developing an SOG relating to children locked in vehicles would place all 17 stations on the same footing. The call typing from dispatch remains once every third day, but the actual number of incidents where children were actually unknowns (Appendix E). Improper NFIRS coding (Kinsey & Ahrens, 2016) is a problem found throughout the fire service and unfortunately doesn't provide a true insight to the real problem.

The reason why it is so dangerous for even one child being left in a vehicle is the time it takes for a vehicle to reach dangerous temperatures. When comparing the time, a vehicles internal temperature rises, it is less than even the grace periods the laws in Florida allow (Gailbreath, 2018). Increasing the awareness to the dangers and risks through public service announcements, literature, or through community interactions should be the goal of all public safety agencies regardless of their mission (Appendix E & Appendix G). The District has the opportunities for interaction with the community before an emergency occurs, most specifically, when members are installing car seats (Appendix G). This time period was identified as a key moment through both interviews (Appendix E & Appendix G) and the survey (Appendix E). The mission of the District isn't just to provide services for emergency responses, it is to also prevent injuries as well. Continuing to increase the prevention efforts and partnering with both

governmental and non-governmental agencies should place the District and the community in a stronger standing.

Recommendations

The following recommendations are based on the data collected from the survey and interviews. The first recommendation was that the District consider the threat of a child being left unattended inside a vehicle a year-round threat. The frequency shows the District will respond to this specific type of incident over 120 times a year. Also, the climate in Florida places its entire population, but most specifically its youngest at risk for heat stress emergencies.

The second recommendation was for the District to train its personnel in the proper coding of incidents for NFIRS reporting. Report writing software has been identified at the highest levels of the fire service as an issue that is not unique to the District. Training and software should allow the end user to properly document the incident nature and location for proper data analysis.

The third recommendation was to develop a standard operating guideline (SOG) for all responses involving a child locked in a vehicle. With over 50,000 (D. Nicolette, personal communication, September 17, 2018) (Appendix A) responses annually it is critical that whenever one calls for service, they get the same level of service each time. The fourth recommendation was for the District continue to its collaboration and partnerships with both governmental and non-governmental agencies. The recommendation for future readers and executive fire officers was to: (a) gain a better understanding of the risks of leaving children unattended in vehicles, (b) review not their incident rates, and (c) their population and climate. Future researchers may be able to aid their organizations and communities with good data.

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Appendix A

Interview with Derek Nicolette

Interview with Derek Nicolette, IT Director at the SLCFD. This interview was conducted on September 17, 2018 by in person and a follow interview in person was conducted on December 12, 2018.

Q: What is your role with the District?

A: My role is to manage the District's IT systems and components. That includes the communications software and radio systems, all computer software systems and components, and data research.

Q: The data research is providing run volume from our report writing software?

A: Yes, Emergency Pro our old report software and FireRMS our new software provides us with our run volume and I provide that to the administration when requested.

Q: How many incidents involving children locked in vehicles did the District respond to in 2017 and 2018?

A: In 2017 there were 128 responses, and 2018 there were 124. We respond to this type of incident weekly and almost every other day. Mr. Nicolette was unable to pull the 2018 run data on September 17, that is the reason for the follow up interview on December 12, 2018.

Q: How does a call get processed as a "child locked in vehicle"

A? The call type and level of response, is based off the information presented to the dispatcher and from there they generate the call to the units in the field. By using automatic vehicle locators and computer aided dispatch we dispatch the closest and most appropriate unit. If information changes during the call taking process the dispatcher can alter the response if needed.

Q: How many 331 "Lock In" codes were found in NFIRS reporting?

A: Due to the ability for the report writer not being required to input NFIRS coding or the correct codes, the data over the past two years is inaccurate or missing altogether. The goal is FireRMS will provide us better information than relying on pre-incident dispatch information.

Appendix B

Interview with Carl Trabulsy

Interview with Carl Trabulsy, Staff Accountant with the SLCFD. This interview was conducted on December 4, 2018 in person.

Q: What are the primary funding sources for the SLCFD?

A: The two main funding sources are Ad Valorem tax revenue and fees from ambulance billing? Since the economic downturn there have been significant reductions to Ad Valorem revenue. Ambulance billing has increased, but only since as the number of patients transported continues to raise annually as well.

Q: Are there additional revenue or funding mechanisms to offset limitations to the SLCFD's two funding sources?

A: Ambulance billing fees were increased in each of the past several years, but reimbursement is primarily dictated off what Medicare and Medicaid reimburse. The District continues to look for ways to offset reduction of Ad Valorem revenue with an upcoming fire assessment fee.

Appendix C

Interview With Marion Long

Interview with Marion Long, Fire Program Specialist with the National Fire Data Center. This interview was conducted on December 12, 2018 via phone and email.

Q: Mr. Long, could you provide me with 331 "Lock In" codes for both Florida and the US?

A: Yes, please email me and I'll provide you with the requested information.

The details are attached.

Group	Count (Incident Type 331 – Lock-in)
Florida	1,826
US 50 States	30,286

Marion

From: DMikels@slcfd.org <DMikels@slcfd.org>
Sent: Wednesday, December 12, 2018 9:39 AM
To: Long, Marion <Marion.Long@fema.dhs.gov>
Subject: NFIRS Data 2017

Mr. Long,

This is a follow up to our conversation about NFIRS data for 2017 concerning the amount of "331 / Lock In" codes for not only Florida, but the entire U.S.

Thank you for your help, it is very much appreciated!!

Respectfully,
Captain Daniel Mikels #700, MS
Special Operations Station 6
St. Lucie County Fire District
772-621-3506
Disclaimer: According to Florida Public Records Law, all emails to and from the St. Lucie County Fire District are considered public records and must be made available to the public and media upon request, unless specifically exempted. The comments and opinions expressed herein are those of the author and may not reflect the policies of the St. Lucie County Fire District.

Appendix D

Interview with Dr. Erin Shaw

Interview with Dr. Erin Shaw. This interview was conducted on December 14, 2018 in person.

Q: How long have you been a physician and where did you receive your education?

A: In 2010, I graduated from the University of Toronto with my Doctor of Medicine degree. I then completed residency training from Dalhousie University in 2012. In 2018, I started to expand into functional medicine by getting a certificate from the Institute of Integrative Nutrition. I've been practicing in Florida since 2013.

Q: What are the stages of heat stress?

A: Heat cramps, exhaustion, and heat stroke. All are dangerous, but heat stroke is when the body starts shutting down and is a true medical emergency. All are serious in nature without a doubt.

Q: Are pediatric patients at risk for heat stress than either you or I?

A: Children especially infants, have accelerated metabolisms and abilities for their bodies to heat up, couple this with their bodies ineffectiveness to sweat and heat dissipation make hyperthermia and all stages of heat stress true medical emergencies. Infants are the most, but all pediatric patients are at greater risk to heat stress.

Q: What temperature does hyperthermia set in?

A: Rough rule is 104 degrees. That is when most protocols begin treatment especially aggressively.

Q: What treatment should be provided to someone experiencing hyperthermia or heat stress?

A: Immediate passive cooling of their core, with damp towels or even water. Most people think you should utilize ice or ice packs, but this isn't effective as it is basically a "shock" to the system. In the case of prehospital treatment, I would start with passive cooling to bring the core

temperature below 104 degrees. In addition to the basic maneuvers I would begin intravenous infusions of saline which will also improve internal temperatures.

Appendix E

Survey Request

Approved. Please make the purpose very clear in your email as it applies to the EFO.

Marti J. Newport #319 MPA, MBA, CFO, CTO
Deputy Chief, Professional Standards
St. Lucie County Fire District
772-621-3335 Office
mnewport@slcfd.org

-----Dan Mikels/slcfd wrote: -----
To: Marti Newport/slcfd@slcfd
From: Dan Mikels/slcfd
Date: 10/04/2018 11:28AM
Subject: Survey

Sorry to bother chief, but did that final version of the survey and intro get ok'd?

Respectfully,
Captain Daniel Mikels #700, MS
Special Operations Station 6
St. Lucie County Fire District
772-621-3506
Disclaimer: According to Florida Public Records Law, all emails to and from the St. Lucie County Fire District are considered public records and must be made available to the public and media upon request, unless specifically exempted. The comments and opinions expressed herein are those of the author and may not reflect the policies of the St. Lucie County Fire District.

From: Mike Merritt/slcfd

To: Marti Newport/slcfd@slcfd

Cc: Michael Leisen/slcfd@slcfd, Dan Mikels/slcfd@slcfd

Date: 09/17/2018 05:57 PM

Subject: Fwd: Fw: Survey Request

Chief, I'm forwarding you this since it seems to need to be vetted by the training dept.

Thank you,
Mike Merritt #266 DC/1A
Division Chief of "A" Shift Operations
St. Lucie County Fire District
Cell # 7722162004

Sent from my iPhone using IBM Verse

From: mleisen@slcfd.org
To: mmerritt@slcfd.org
Cc: DMikels@slcfd.org
Date: Sep 17, 2018, 5:23:09 PM
Subject: Fw: Survey Request

Chief,

Please see email from Capt. Mikels below.

Respectfully
Michael Leisen
Battalion Chief 3, A Shift
St. Lucie County Fire District
772-621-3403 (office)
772-216-6149 (cell)

-----Forwarded by Michael Leisen/slcfd on 09/17/2018 05:22PM -----
To: Michael Leisen/slcfd@slcfd
From: Dan Mikels/slcfd
Date: 09/17/2018 12:17PM
Subject: Survey Request

Chief,

Could you forward this email through the chain?

I am looking to produce a survey identifying/understanding the risks to children being left unattended in automobiles. The goal is to see what our personnel view as the risks/hazards to children being left unattended and methods our personnel/organization can take to reduce those risks/hazards. This survey will go towards the National Fire Academy's Executive Analysis of Community Risk Reduction course which I just recently attended.

Respectfully,
Captain Daniel Mikels #700, MS
Special Operations Station 6
St. Lucie County Fire District
772-621-3506

Disclaimer: According to Florida Public Records Law, all emails to and from the St. Lucie County Fire District are considered public records and must be made available to the public and media upon request, unless specifically exempted. The comments and opinions expressed herein are those of the author and may not reflect the policies of the St. Lucie County Fire District.

Appendix F

Internal Personnel Survey

Survey Request

Dan Mikels Tuesday, October 09, 2018 01:20PM

To: All Aligned Station Personnel, All Training Staff Show Details

Cc: Marti Newport

This email and survey have been approved by the Administration.

I am a student enrolled in the National Fire Academy's Executive Fire Officer Program. I have just completed Executive Analysis of Community Risk Reduction and I would like to ask your help by completing a brief survey. The survey will aid in my completion of an applied research project aimed at reducing occurrences and impacts to children left unattended in vehicles. The survey link is from SurveyMonkey. Thank you for your consideration.

https://www.surveymonkey.com/r/N5YS66V

If needed, you can copy the link into your address bar. Thank you again.

Respectfully,
Captain Daniel Mikels #700, MS
Special Operations Station 6
St. Lucie County Fire District
772-621-3506
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1) Would you find a Standard Operating Guideline or Policy for incidents involving children locked in vehicles beneficial? Yes/No
   Yes 88.64%
   No 11/36%
2) Would it be beneficial for an engine/aerial to respond on all incidents involving children locked in vehicles? Yes/No
   Yes 38.64%
   No 61/36%

3) What NFIRS code would you utilize for incidents involving children locked in vehicles?

A 311 - Medical Assist, assist EMS crew 4.55%
B 321 - EMS call, excluding vehicle accident without injury 9.09%
C 331 - Lock in, includes vehicles (if lock-out, use 511) 86.36%

4) What could be incorporated to increase awareness to the dangers of leaving children unattended in vehicles? Select as many as appropriate.
A Public Service Announcements (social media, television, website) 88.64%
B Increase partnerships with law enforcement, health department, hospital 59.09%
C Handouts/Literature (delivered during car seat installations and open houses) 65.09%

Appendix G

Interview with Brenda Stokes

Interview with Brenda Stokes, Public Information Officer (PIO) and Executive Aide to the Fire Chief with the SLCFD. This interview was conducted on December 14, 2018 in person.

Q: What is your role with the District?

A: I serve as the Public Information Officer (PIO) and I'm the Executive Aide to the fire chief. I'm responsible for all media releases, both traditional platforms and all social media releases. I also assist the fire chief in whatever duties he requires. Currently, I represent the District on the boards of "Lil Feet" and the Big Heart Brigade, both of which are 501 nonprofit organizations.

Q: I'm conducting a research paper on preventing injuries to children left in vehicles, you come to the District with a history of working with children?

A: I spent over 17 years with the Boys and Girls Club in various roles of leadership. We work with children of all ages and that has helped me in not only my role here at the District, but also with the nonprofit organizations I am apart of today.

Q: What is the organization we partner with in regards to car seat installations?

A: The car seats partnership is with Safe Kids St. Lucie County. Parents that need car seats call in and schedule an installation and our District personnel are the ones installing the seats. There are about 10-15 trained car seat technicians. Once per month we offer this as Safe Kids provides the car seats and the District provides the site and trained technicians.

Q: Does the District provide any literature or handouts concerning the risks and hazards to children being left inside of a vehicle?

A: At this time, we currently do not. Throughout the year we offer handouts with information concerning stroke awareness, drowning prevention, fire and life safety information, but nothing

specifically with children inside of vehicles. There are opportunities though either at open houses or during the monthly car seat installs where we can target either new parents or anyone with children.