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Examining Aquatic Facility Managers' Content Knowledge of Emergency Response Planning, Implementation, and Evaluation

Emily Wujcik

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EXAMINING AQUATIC FACILITY MANAGERS' CONTENT KNOWLEDGE

OF EMERGENCY RESPONSE PLANNING, IMPLEMENTATION AND EVALUATION

A Thesis

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Master of Science

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Planning, Implementation, and Evaluation
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This study investigates the content knowledge of aquatic facility managers regarding

Emergency Action Plans (EAP). Participants completed a 23 question online survey using

Qualtrics®. Data analysis revealed three emerging themes which included certifications,

management experience, and EAP implementation. An EAP was present in all participant's

facilities (n=29). Participants reported holding certifications from different agencies and many

managers referred to their years of experience to help with the creation, implementation, and

evaluation of their facility's EAP. Participants also reported practicing their facility's EAP with

their staff multiple times per year as well as allowing them to have input on it. Multiple

participants also reported refreshing their staff's rescue/response skills multiple times per year.

This research gives an insight to what these managers know, understand, and the actions that

take place in their facility.

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CHAPTER I

INTRODUCTION

When emergencies happen, there needs to be a quick response (Curtis, 2009). Drowning and medical emergencies are common and of great concern in aquatic facilities. In the United States, the Centers for Disease Control and Prevention (CDC) reports that drowning is the leading cause of unintentional injury related death in children ages 1-4 (CDC, 2010). Drowning is a worldwide problem. The World Health Organization (WHO) released their Global Report on Drowning (2014), which estimates that 372,000 people fatally drown each year worldwide. In 2014, the CDC found that there were 3,406 unintentional injury related deaths due to drowning (CDC, 2014). A total of 9,642 unintentional non-fatal drowning injuries were reported that same year (CDC, 2014).

While drowning is a priority safety concern in aquatic facilities; other illnesses and injuries can take place in an aquatic facility. These include sudden cardiac arrest, heart attacks, and strokes. Sudden cardiac arrest (SCA) is the leading cause of death in young athletes (Maron, 1996). Once that person enters SCA or any other major medical issue, an immediate response is needed to care for the victim. An Emergency Action Plan (EAP) needs to be in place to ensure an effective and efficient response. An EAP and an Emergency Response Plan (ERP) are both a list of actions and responsibilities that persons involved must follow in order to ensure safety during emergencies. Although both are acceptable terms, within the aquatics field EAP is the most commonly used and referenced, which is why within this research the term EAP will be used. All employees at aquatic facilities must be aware of what their EAP procedures are, their exact role, know where a copy of it can be easily found, and know how and when to activate it (Mokris, Hanna, and Neumann, 2011).

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The Occupational Safety and Health Division of the North Carolina Department of Labor, describe an EAP as a written document that has the purpose of facilitating and organizing actions during workplace emergencies (N.C. Department of Labor, 2011). EAPs are used by all facilities, such as colleges and universities, sport facilities, and aquatic facilities alike (N.C. Department of Labor, 2011). There are multiple elements that form an EAP, including emergency personnel, emergency communications, and emergency equipment (Courson, Navitskis, and Patel, 2005).

The first responder to an incident should have certification in cardiopulmonary resuscitation (CPR), first aid, prevention of disease transmission, and emergency-plan review (Courson, 2005). Aquatic facilities are different than other facilities, such as fitness centers or sport facilities in regards to certifications and training for an emergency. All emergency response personnel need to work together and be knowledgeable of the most updated version of that facility's EAP before returning to work (Potter & Martin, 2009). This knowledge is to help them stay calm during an emergency (Mokris, Hanna, and Neumann, 2011). Communication needs to be strong between the first responders and any others – such as highly certified staff within the facility, emergency medical personnel, or fire rescue personnel that are involved in the emergency. Emergency medical services (EMS) need to have information about the emergency, including where it is happening, what has occurred, how many people are injured, and how severe the injuries are (American Red Cross, 2012). EMS will have their own emergency equipment that they will use, however each facility needs to have equipment such as lifeguard tubes, a back board, and first aid equipment that is available and accessible during any emergency. Understanding and constant practice of the EAP is essential to provide a victim the

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best chance of survival (Mokris, Hanna, and Neumann, 2011). All responders must care for the victim to the best of their abilities and stay within their scope of training.

Problem Statement

There is currently little literature and research that is available regarding what content knowledge that aquatic facility managers have regarding the planning, implementation, and evaluation of an EAP at their facility.

Purpose

The purpose of this study is to look specifically at the aquatic facility manager's content knowledge of EAPs. There is limited research on the content knowledge of the aquatic facility managers on EAP, and the results of this study provided more insight to this limited research area. Studies have shown the importance of having an EAP (Courson, 2005; Curtis, 2009; Herbert, 2007).

Research Question

What content knowledge do aquatics facility managers have regarding the planning, implementation, and evaluation of Emergency Response Plans?

Hypothesis

Aquatic facility managers will not have a robust content knowledge of emergency action plan planning.

Definition of Terms

- Emergency Action/Response Plan – A protocol that describes actions and responsibilities of persons involved that must be taken to ensure safety during emergencies.

- Aquatic facilities – An indoor facility that has a Class A or Class B pool

- Class A Pool – A pool that is designed and used mainly for competitive use

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- Class B Pool – A pool that is designed and used mainly for recreational use

- Aquatic facility manager – An individual who directly oversees the daily operation of the aquatic area(s) of a facility and the employees

- Content knowledge – What information the aquatic facility manager has regarding the formation, implementation, and practice of an EAP

Assumptions

- All aquatic facility managers will have similar training on an Emergency Action Planning and what protocols and actions need to be addressed.

- All aquatic facility managers will have planned and implemented an EAP at their facility with their employees.

- All contacted aquatics facility managers are the decision makers in charge of their EAP.

- All aquatic facility managers will answer interview questions honestly.

Limitations

- Gaining a full understanding of an aquatic facility manager's content knowledge of EAP was difficult to obtain using only an online survey protocol.

- Due to the survey being online, it is not possible to verify participant's answers.

- There is also a small size for this study (n=29). This could be due to the fact that participants were selected based upon the facility that they work in, which limits who could be invited to participate.

Significance

This study has been completed to look at what content knowledge aquatic facility managers have regarding the planning, implementation, and evaluation of emergency action plans. When any type of incident happens, the EAP needs to be effective and efficient. If a

facility does not have an up to date EAP, or the members of the staff are unprepared to handle an emergency, it can lead to fatalities. This study analyzed what aquatic facility managers know about EAPs. It helped to gain a better understanding of how they are using their knowledge about EAPs in their facility, to ensure their facility and their employees are prepared for any type of emergency.

CHAPTER II

LITERATURE REVIEW

Emergency action plans (EAP) have been implemented all over the world. The EAP is a written document with procedures that list out who is doing what during an emergency. There are typically three different sections of the EAP which are emergency personnel, emergency communications, and emergency equipment (Courson, Navitskis, and Patel, 2005). Each part needs to work seamlessly together during an emergency, and the employees who are responding to these emergencies need to have specific certifications to help them be prepared to handle and emergency situation (Yarger, 2007). An EAP is a list of procedures and steps to follow during an emergency. It may also have contact lists of who they should contact in the event of an emergency happening. This is to aid the process of helping that victim(s) to receive the best and most efficient care. There have been studies done on emergency action planning. The three components of an EAP need to work together and have strong communication before, during, and after the implementation of an EAP when an emergency happens. Research has been done regarding what needs to be included within an EAP and the importance of having them, as well as different certifications that are available in the aquatics field and some of the issues revolving around lifeguards in particular.

Emergency Action Plans

Many different types of facilities use emergency action plans. Colleges and universities, other sport facilities such as local gyms, recreation facilities, schools, malls, and aquatic facilities of any kind such as water parks and resorts use and implement EAPs. Each facility has their own EAP and it is specific to their facility. Many studies have looked at the personnel that are involved (Morkris et al. 2011, Potter & Martin, 2009, Courson, 2007, Courson et al. 2005,

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Walsh, 2001). For example Courson (2007) discussed that the certified athletic trainers and the emergency medical services (EMS) need to work together during an emergency that occurs at a college or university. Additionally, other personnel who are going to be involved in any way during an emergency, need to have their cardiopulmonary resuscitation (CPR), first aid, prevention of disease transmission certifications. They also need to have knowledge of that facility's EAP (Courson, 2007).

Each facility is going to have their own EAP that has been created, adapted, and is specific to that facility (Mokris et al. 2011). Courson, Navitskis, and Patel (2005) state that there are a multitude of people that can and should be involved in this planning. This may include emergency medical technicians (EMTs), coaches, team physicians, certified athletic trainers (ATCs), athletic director, and in some cases bystanders. By bringing all of these different people together to help form the emergency action plan, it can give different perspectives on how to create a cohesive plan that will flow well at a facility. Having the EAP is a good first step, however it may be necessary for it to be updated (for instance when there is new construction going on that may change the facility and the layout in some way; Drezner et al. 2007). Employees of that facility need to be aware of their emergency action plan is, and notified when and if it is updated and must be made aware of what changes were made. Not only do the employees need to be made aware of the change(s), but EMS must be aware as well. When an emergency happens, EMS needs to know of any changes that have occurred so that they are able to adapt what they need to do and how they get to the emergency in some cases.

Practicing an EAP can be seen as a learning opportunity for those that could be the first responders in an emergency such as an athletic trainer, depending on when and where the incident happens (Mokris et al. 2011). This allows a facility the opportunity to build the

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relationship and communication between themselves and other members of the emergency team. Personnel that may be involved in this training are the employees of that facility, students who often use that facility, and emergency medical services. When all of these groups work together they are able to anticipate and correct some of the problems that might arise during an emergency. This also is an opportunity to either begin or continue the communication between the facility and EMS (Morkis et al. 2011).

According to Curtis (2009) prevention can be a key factor in reducing the risks of injuries. By being proactive, you are helping negate some incidents and injuries from happening. Research has been completed on what components were needed in order to have a successful emergency plan (Curtis, 2009). While this study looked specifically at university shootings in the United States, this is still a type of incident where aquatic facilities need to be aware of and be prepared for. This study took it another step farther and said that you need to look not only at the emergency plan you have in place, but the emotional state of your employees, any physical or environmental hazards, as well as the climate changes that might affect the safety and security of your facility. A facility should also want to try and prevent injuries, risks, legal liabilities, and so on (Curtis, 2009).

Courson, Navitskis, and Patel (2005), stated that there are four main roles that people have during an emergency. The first role is the person who is making the initial contact with the victim, the second role is the person who is bringing the necessary equipment to the scene, the third role is the person who is calling EMS and alerting them of the incident and giving necessary information, and finally the fourth role is person who is meeting EMS and leading them to the incident. The person who is in the first role should be the person that is the most qualified to do so. You always want to provide the best care possible in any incident. Whoever is

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taking the second role needs to make sure that they are aware of where the emergency equipment is, what they need to take to the scene, and make sure that that equipment is always kept in a safe, dry, and easily accessible area. The third role is the person who is activing their plan, and informing EMS of the incident. They need to make sure that they are capable of keeping calm in a stressful situation, and can give the operator the correct information, and to do that in an effective and efficient way. Finally, those who are directing EMS to the scene need to be familiar with the area, and should have keys to unlock any doors that could slow their response time down (Courson et al. 2005).

Research completed by Herbert et al. (2007) looked at the cardiovascular emergency preparedness at recreation facilities at major US Universities and found that of their 158 participating facilities, 82% of their staff reported that they were certified in basic life support (BLS), but only 64% were certified in both BLS and automated external defibrillator (AED). BLS involves being certified in CPR, AED use, and First Aid. Having a high quality trained staff can help in emergencies, especially in cases where EMS has a longer response time.

Drezner et al. (2007) goes into detail about the different elements that should be included within the EAP for it to be effective. First, having a strong communication system, CPR and AED training, having necessary emergency equipment, practicing the plan, and finally the AED as early as possible. An EAP is needed in all types of facilities, including aquatic facilities which have a high risk of injuries, illnesses, spinal emergencies, and drowning. Regardless of where the EAP is being implemented, these steps should be followed (Drezner et al. 2007).

Practicing your facility's EAP and having the staff be aware of every aspect of how to use it best is important at any facility. The different certifications that are available within the aquatics world help to prepare those who will be responding to an emergency. However, there is

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no way of knowing what type of incident will occur. Curtis (2009) speaks about shooting incidents that have happened in the United States at colleges and universities; it is also stated that it is stressed that every facility's EAP needs to be re-evaluated to ensure that the plan is going to be effective and efficient. According to Curtis (2009) there are four key phases that should be involved in an EAP: preparation, prevention, response and recovery. These components should be looked at after an incident happens to ensure that if any changes need to be made, they are addressed and made so that if another similar incident happens, the facility can be addressed quicker and more efficient if possible.

<div align="center">**Aquatic Facilities Risk Management**</div>

Risk management is a term often used throughout any type of sport facility, university, or aquatic facility. Risk Management is defined as "identifying and eliminating or minimizing dangerous conditions that can cause injuries and financial loss" (American Red Cross, 2017). While it is important to understand the risks that are involved with running a facility, there are different risks that are associated with different facilities.

Aquatic facilities have their own unique set of risk management issues. Mulcahy (2016) investigated the risk management that leads to the prevention of drowning and injury. It begins with the elimination or isolation of the hazard. This gets broken down further into increasing supervision and surveillance and increase efficiency and effectiveness of response (Mulcahy, 2016). Once an emergency happens, there needs to be a quick and efficient reaction and treat the risk and the communication needs to take place quickly and efficiently.

In the United States, drowning is the leading cause of unintentional injury related death among those ages 1-4. Drowning is also the second cause among those ages 5-9, the third for those 10-19, and fourth among those 20-44. Drowning is a worldwide problem; 388,000 people

drowned in 2004 (Ramos et al. 2015). The World Health Organization (WHO) released their Global Report on Drowning (2014), which estimates that 372,000 people fatally drown each year worldwide. In 2014, the CDC found that there were 3,406 unintentional injury related deaths due to drowning (CDC, 2014). A total of 9,642 unintentional non-fatal drowning injuries were reported that same year (CDC, 2014). With drowning being a leading cause of unintentional injury related death for so many people within the world, aquatic facilities and their managers need to be aware of these numbers and have an effective EAP in place to address a drowning incident.

In a study done by Herbert et al. (2007), a 37-question survey was given out and returned by a total of 158 universities that were classified under the Recreational Sports Directory of the National Intermural Recreation and Sports Association (NIRSA) in 2002. The survey gave the researchers demographic information such as how large their facility was, how many full-time and part-time staff they had, the different certifications of their staff members, and the education that those working in the facility had. Some of the questions took a deeper look into the emergency procedures that they had set in place, as well as the specific programs that were available to members with increased risk of having a cardiovascular emergency. Other questions inquired about incidents that the facility has had in the past 5 years, and whether that facility had access to an AED within the vicinity.

The results found that a total of 82% of the universities required that one staff member be on duty during all of their open hours of operations that was certified in basic cardiac life support, only 63% (100 universities) has all of their staff members certified in basic life support (Herbert et al., 2007). From the survey, it was also found that almost 75% of the universities

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reported having an AED on site, and over 50% of those staff members were trained in both basic life safety and AED training (Herbert et al., 2007).

Certifications from different agencies are available that are specific to aquatics. These certifications provide proper training and credentialing to people who work in an aquatic environment to help prevent incidents from occurring as well as how to respond to an incident. The ARC has created the circle of drowning prevention that has 5 components. Those include providing close and constant attention to children you are supervising in or near water; fence pools and spas with adequate barriers, including four-sided fencing; learn swimming and water-safety survival skills; children, inexperienced swimmers, and boaters should wear U.S. Coast Guard-approved life jackets; and always swim in a lifeguarded area (Ramos et al. 2015). When the facility manager uses this as a guideline it can help their facility be prepared for an emergency. The ARC also provides details about the chain of drowning survival. There are five links in this chain that go as follows: recognize the signs of someone in trouble and shout for help; rescue and remove the person from the water (without putting yourself in danger); call EMS; begin rescue breathing and CPR; use and AED if available and transfer care to advanced life support. (Ramos et al. 2015). The lifeguards that come from the ARC are well aware of this chain and are trained to use this in an emergency.

While drowning is a large concern at all aquatic facilities, there are also other injuries that lifeguards are trained on. Often times the ARC uses the term "preventative lifeguarding" which means that a lifeguard is trying to prevent an injury or incident from happening. This could be seen as a lifeguard reminding a patron to walk around the pool deck or that they are only allowed to dive in 5feet of water or deeper. Preventing injuries from happening is key, however not every incident can be prevented. That is why every lifeguard is trained on how to respond to water

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rescues that need to be made, or breathing emergencies, cardiac emergencies, first aid care, and head neck and spinal injuries all of which could happen either in the water or out of the water (American Red Cross, 2017). A breathing emergency might include a patron who is found not to be breathing at all and requires CPR by the lifeguard. A cardiac emergency can be a patron who is having a heart attack either in or out of the water. A patron who may need first aid care could be in an incident where they have cut themselves on a sharp object and they need to stop the bleeding. Finally a head, neck or spinal injury could occur either in our out of the water in which case the lifeguard is going to have to take special precautions as to not hurt or move the patron more than absolutely necessary.

After an incident occurs, there are more steps that need to be taken to ensure that all persons involved (all employees who responded) are cared for and debriefed on the situation (Courson et al. 2005). Counseling may be a part of the aftermath, but it is important to inform everyone of who they are allowed to talk to about the incident. Documentation of the events must be written down and collected to ensure that the full and complete story has been told. Planning and preparation is extremely important, and following through with the plans just as important as the planning. Curtis (2009) also stated in that a recovery phase was needed for all who were involved in the incident. A crisis intervention team can be helpful for those who incidences where you need more help than you at your facility can give. The results from looking at these four areas came from a total of 28 emergency plans (Curtis, 2009).

Having and following the EAP of each facility is important. If it is not implemented, followed, or activated at all there can be serious ramifications. Numerous lawsuits are filed each year following an incident due to things such as negligence, failing to meet the standard of care or the duty to act. Duty to act is defined as "a legal responsibility of certain people to provide a

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reasonable standard of emergency care; may be require by case law, statute or job description"
(American Red Cross, 2017). When a patron(s) go to an aquatic facility that has lifeguards on
duty, it can be assumed that if an incident were to occur in which the patron(s) need assistance
that they would receive that care. When that care is given, it is the duty of the lifeguard that is
giving the care to the patron that they are meeting the standard of care. The standard of care is
defined as "the minimal standard and quality of care expected of an emergency care provider"
(American Red Cross, 2017). If an incident happens and there is no response from a lifeguard,
this could be considered negligence. By definition, negligence is "the failure to follow the
standard of care or to act, thereby causing injury to further harm to another" (American Red
Cross, 2017). If a lawsuit is filed, and the case it won by the plaintiff, it could cost millions of
dollars to reach a settlement which could close down a facility forever.

Within the ARC Lifeguard Manual (2017) it is taught that if a lifeguard cannot see the
bottom of the pool, they are to close the pool according to their EAP and remain closed until the
problem has been fixed. Multiple court cases have come from this issue with the lifeguard's
failing to follow their EAP and follow the necessary steps to close the pool and due to their
negligence there have been fatal drownings. Cases such as *Nautilus Insurance Company v.
Dolphin Pools Corp.* (1990), *Burgert v. Tietjens* (1990), and *Spergel v. Dolphin Pools Corp.*
(1990). Although different money values have been awarded to the plaintiffs in these cases, the
largest amount was over $660,000. Cases such as these put the facility and the staff in a court
room and often times the outcome can close down a facility.

In the case of *Nautilus Insurance Company v. Dolphin Pools Corp.* (1990), the case was
regarding the fatal drowning of one Mitchell Spergel in a motel pool. It was found that while the
pool was murky, the lifeguard was found to be negligent for not closing down their pool. Within

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the case of *Burgert v. Tietjens* (1990) there was a similar issue regarding murky water. It was stated by Circuit Judge Barrett "that where water in swimming pool was so murkey that one could not see below three feet of water, operators of pool were negligent" and they had failed to establish an assumption of risk for entering the water. Similarly, *Spergel v. Dolphin Pools Corp.* (1990) a swimmer fatally drowned in murky water in which the bottom of the pool was not able to be seen by a lifeguard. Due to this, the lifeguard was not able to see the victim drowning or laying on the bottom of the pool.

All of these facilities were found to be negligent by allowing swimmers to enter the water and failing to close down the pool until the water had become clear again. Maintaining a safe operating facility in which the lifeguard can visibility and clearly see the bottom of the pool is taught within the ARC Lifeguarding course (American Red Cross, 2017). Within these cases involving murky water, the aquatics director or whomever held responsibility for the pool and its operations should have closed the pool until the water was clear and the bottom of the pool was visible. It is cases such as these that show how important it is for a facility and its staff to follow their EAP and shut down their facility when necessary.

Other cases have come about for different reasons such as failure to have lifeguards on duty during operating hours of the pool. This was the situation in the case of *Kopera v. Moschella* (1975). In this case, the plaintiff (the family of the child who drowned) was awarded $85,000 from their apartment complex as they were found negligent. The apartment complex also failed to have barriers up around the pool such as fencing and a gate. It was also stated that the apartment complex failed to cover the pool when not in use or the weather would not allow use of the pool, as well as failing to maintain the rescue equipment that was close by to the pool.

Similar to that case, the *Barnes v. Dallas Park and Recreation De*pt. (1999) case was that of a non-fatal drowning where the defendants were found to be negligent for failing to provide proper training to the lifeguards that were on staff as well as failing to properly supervise the lifeguards that were on duty. It was also found that the defendants failed to "properly train the lifeguards employed at the pool in the proper method of responding to swimming-related emergencies" also. In this situation, whomever was the aquatics director should have done routine trainings with their staff to ensure that they were aware and could execute their facility's EAP which is shown throughout the body of literature to be effective.

Aquatic Certifications

One of the most well-known and accepted agencies that provide the certifications above is the American Red Cross (ARC). Knowledge and certifications obtained from the ARC can help to prevent aquatic emergencies from happening. Even when emergencies do happen, these certifications will provide the personnel who are responding to be equipped with the proper skills and knowledge to follow their facilities EAP out to the best of their ability.

Aquatic facilities have different risks than other sports facilities (Yarger, 2007). With these risks, employees of that facility tend to have higher qualifications than many other types of sport facilities, and there are certifications that are specific to aquatics. The ARC has certifications of Lifeguarding, Lifeguard Instructor (LGI), Lifeguard Instructor Trainer (LG-IT), Water Safety Instructor (WSI), lifeguard management, CPR, First Aid, and bloodbourne pathogens training among others. Other certifying agencies such as the National Swimming Pool Foundation have a Certified Pool Operator (CPO) certification that is available; the National Park and Recreation Association has the Aquatic Facility Operator (AFO) certification available. The Young Men's Christian Association (YMCA) also has certifications available such as

Lifeguard, Lifeguard Instructor, Swimming Instructor, Swimming Instructor Trainer, Aquatic

Facility Management Trainer and more. All of these positions require skills and knowledge that

is specific to aquatics (Yarger, 2007). With this knowledge and skills, comes better response

times and these employees are better equipped to handle an emergency in or around the water.

Often aquatic facility managers hire their employees based on these certifications. Yarger

(2007) also touches on the fact that many aquatic facilities go even farther in depth with their

employees by administering criminal background checks, medical examinations, drug and

alcohol screenings, physical-ability tests, and other screenings. All of these tests and screenings

that are used can be brought back to the facility's EAP to ensure that the staff at the aquatic

facility is aware of what their EAP entails and are able to respond the proper way that is set up

within their written EAP. It also shows that they are physically and mentally capable to carry out

their facility's EAP.

According to Yarger (2008) the most common certifications that were held from aquatic

facility manager's was lifeguard and certified pool operator (CPO) certifications. Within this

study, Yarger (2008) looked at aquatic facilities and looked for key factors that related to

injuries, accidents, and deaths at these facilities. It was found that while certifications were held

by these managers, experience also came into play in a big way. "When managers had no aquatic

experience before their current position, they were less likely to provide regular in-service

training than managers who had prior aquatic experience" (Yarger, 2008). Taking this

information further, it is suggested that these aquatic professionals need to obtain more training

and formal education before they are to become an aquatic manager of a facility especially

within a college or university. The Model Aquatic Health Code (MAHC; 2016) gives

suggestions for what training lifeguards should have. Within their course work to become a

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lifeguard, it is suggested that their training should include but is not limited by: hazard indentification and injury prevention, emergencies, CPR, AED use, bag-valve mask for both adults and pediatrics, first aid, and legal issues (MAHC, 2016). The MAHC (2016) also has recommendations for lifeguard supervisor training. The first point that is made here is that the training elements should include the activation and execution of EAPs. This is important for all aquatic facilities to have, and most importantly the managers of this facility need to be aware of what it is to ensure that is working properly within their facility. They go on to say that scanning and vigilance requirements need to be met to ensure that this is followed by their employees and they are working properly.

There are also often times when an aquatic facility manager looks at the experience of their staff when working with their EAP. The more training and preparation that you have for an emergency the more likely that employee(s) are able to carry out the EAP effectively. The different certifications that are available help to teach these employees what to do in case of an emergency and how to react. This is important for the managers of aquatic facilities to hire those that are qualified. Hiring qualified staff is key to a successful facility that can produce positive outcomes from incidents that might happen at a facility. While hiring these highly qualified people is the best practice, it can be difficult to find these highly qualified people. This can create a shortage of people that are able to work at these aquatic facilities. Yarger (2007) suggest that to combat this, aquatic facility managers should look at becoming instructors of some of these different certifications to allow them to provide updates for their staff during in-service trainings.

<div align="center">

Problems Revolving Around Lifeguards

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While lifeguards are certified on how to identify a distressed swimmer, an active drowning victim, and a passive victim, there are still cases in which drownings (both fatal and

<div align="center">18</div>

non-fatal) happen in lifeguarded areas. A distressed swimmer is a swimmer who able to keep themselves on the surface of the water, but is not able to get to safety by themselves (American Red Cross, 2017). A distressed swimmer can become an active drowning victim. The ARC (2017) defines an active drowning victim as a swimmer who is vertical in the water, is not able to make any type of forward progress and is struggling at the surface of the water. An active drowning victim can become a passive drowning victim with a loss of consciousness. A passive drowning victim is a swimmer who is unresponsive in the water and is either close to the surface of the water or is submerged under the water (American Red Cross, 2017).

Pia (1984) speaks about the instinctive drowning response. This occurs when the victim is still considered an active drowning victim. This is the victim's fight or flight response while in the water. The victim in this situation is usually not able to speak or call for help in any way. The initial need for the respiratory system is to breathe, not to speak (Pia, 1984). Their arm movements are going up and down in a thrashing manner in their attempt to stay at the surface of the water to breathe. While their arms are moving, they are not able to make any forward progress, however they typically are able to turn themselves around to face the shore or someone that they believe can help (such as a lifeguard; Pia, 1984). Pia (1974) stresses that drownings are often silent (due to the need to breathe rather than call for help) and happen quickly, which is why lifeguards need to stay vigilant watching while on duty.

There has been research conducted on lifeguards and their ability to recognize and respond to an incident in the water (Griffiths, 2002; Lanagan-Leitzel & Moore, 2010; Lanagan-Leitzel, 2012). Dr. Pia speaks about the RID Factor as a way to explain and understand how and why drownings still happen in lifeguarded areas. The RID Factor stands for Recognition, Intrusion, and Distraction (Pia, 1984). Breaking each factor down, recognition of what drowning

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looks like and understanding the difference between a drowning victim and a patron playing is key. Intrusion can come from different sources; for instance it might be completing a secondary task such as taking pool chemicals or cleaning the restroom. Finally distraction could be a conversation that is happening between the lifeguard and a patron.

Griffiths (2002) compares lifeguarding to the sport of baseball, when often there are long periods of time with little action or activity going on. However routine and boring vigilant scanning might be, it is still important to continue to watch the water and that lifeguard's area of coverage. Griffiths (2002) developed The Five-Minute Scanning Strategy which is changing the position, eye pattern, and posture of lifeguards in every five minutes. In doing this, and making these changes, the lifeguard can better stay alert and pay close attention to the swimmers in their area. While this strategy is often used by lifeguards, there are a lot of different technologies that are becoming available to aid lifeguards in detecting when someone might be in trouble. With these advancements, they can be introduced as "the lifeguard's third eye" (Griffiths, 2002). There have been multiple court cases that have come from the failure of a lifeguard to notice a drowning victim quickly. Many of the cases that have gone to court are those in which the victim fatally drowned. In the case of *Onufer v. Seven Springs Farms, Inc*. in 1980, the patron was not recognized as a passive drowning victim by the lifeguard, but was noticed by another patron and due to delay of care, the victim fatally drowned. In this case, the lifeguard was found to be negligent in not watching carefully and scanning effectively and efficiently.

Avramidis (2009) also states that lifeguards are typically only able to maintain vigilant scanning for a period of 30 minutes at most. A lifeguard's scanning technique can diminish due to different variables such as fatigue, monotony, stress, or heat. Boredom could also be a reason that lifeguard's scanning can diminish due to the monotony of the job or the frustration with the

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job (Fenner, Leahy, Buhk, and Dawes, 1999). The young age of lifeguards could also be a factor. To be eligible to become an ARC lifeguard, you must be at least 15 years old (American Red Cross, 2017). Avramidis (2009) states that due to the young age of many lifeguards, they might not have yet adapted an adult work ethic, and goes on to say that for these reasons, there is need for a "head" or "lead" lifeguard whose role is that of supervising the current lifeguarding staff to help ensure that the staff is acting and doing what is expected of them.

Lanagan-Leiztal (2012) states that "parents are ultimately responsible for their children" when they are in the water, however they "need to be reminded that lifeguards are not babysitters" regardless of the situation. While often parents are under the impression that having their children enrolled in swimming lessons is going to give them the skills so that they are not going to drown. This is not always the case, and there are other factors that go into a drowning incident. The Five-Minute Scanning technique by Griffiths and the "3-D triage scanning" technique from Starfish Aquatics Institute were looked at in a study by Lanagan-Leiztel and Moore in 2010. It was found that the lifeguards in this study looked not only for the behaviors that they were taught from their certification course to be a lifeguard, but it was suggested that in order for the lifeguard to be effectively scanning their area, they should continuously keep their eyes moving (Lanagan-Leitzel & Moore, 2010).

There is research that has been completed regarding the different certifications that are available for those working within in the aquatics field. Research is available regarding the importance of EAPs and the components that should be addressed within them. However, there is little research that looks specifically at the aquatic facility's content knowledge of the creation, implementation and evaluation of EAPs. This study will help to explore this little researched area. Having an understanding of what these manager's know about EAPs can help to show if

there are any common themes that they do know or if there is something that is missing. When the managers have a full understanding of EAPs and share that knowledge with their staff, it can help to ensure that the activation and implementation of that EAP goes smoothly when an incident happens.

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CHAPTER III

METHOD

To gain an understanding of aquatic facility manager's content knowledge of emergency action plans, the participants partook in an online survey using Qualtrics®. All questions were regarding their content knowledge of the creation, implementation and evaluation of their facility's EAP. No questions of a personal nature were asked. All data was analyzed using an inductive coding procedure that was created by two researchers. Demographic information was analyzed using a bar graph to represent the answers that were given.

Participants

A total of 29 participants were recruited based on their employment in a public Class A or Class B Pools. By definition, Class A pools are built mainly for competition, and Class B pools are used for recreational use (National Swimming Pool Foundation, 2015). For this study, only those that were employed at public Class A or B pools were used because these facilities are recreational and/or sporting facilities. This was chosen due to the fact that most pools that are meant for competition or recreation are very similar in their operations. All participants had the responsibility of being the decision maker for their facility's EAP.

Inclusion Criteria

The selection of aquatic facility managers was based upon their employment at a public Class A and/or Class B pool(s). To ensure that an appropriate sample of aquatic facilities are recruited, each facility had an indoor or outdoor pool which operates year round. This was chosen to include a representation of facilities that were in the southern states. The aquatic facility managers did not need to have any particular certifications, or have been working for a

minimum number of years in order to participate in this study. This was to obtain a well-represented sample of the content knowledge aquatic facility managers had.

Exclusion Criteria

Participants were excluded from participation if they did not work at a public Class A or Class B pool. They were also excluded if they did not complete they survey with at least 17 of the 23 questions. Participants were excluded if they were not responsible for their facility's EAP, or their facility's pool was only open seasonally.

<div align="center">

Procedures

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In order to gain a full understanding of the content knowledge that these aquatic facility managers had, the online survey collected data both quantitatively (in the form of multiple choice questions) and qualitatively (in the form of open-ended questions).

Recruitment and Selection

Participants were selected from known facility managers within the United States that worked at Class A and/or Class B pool(s). A further online data search was done in addition to these known facility managers. Initially, the researcher looked at what type of pool(s) that were at each facility. After the facility met the inclusion criteria based upon the pool(s) at their facility, the researcher gathered the aquatic facility manager's name and email. Invitations to participate in the online survey were sent to each participant individually via e-mail from the primary researcher. The invitation to participate included the consent form and information regarding the study within the link to the survey using Qualtrics®. Participants were selected based on the type of facility that they are employed at. A total of 186 invitations to participate were sent out. Twenty-nine completed surveys were returned.

Survey Procedures

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Once the invitation was sent out, participants gave their consent to participate by clicking on the link to the survey. After two weeks if the participant had not completed the survey, they were sent a follow-up email with the same link to the survey. Only the two researchers were able to see participant's answers. The questions that were asked in this survey were used to garner information about the type(s) of pools their facility has, how long each participant has been working at their facility, the length of time the participant has been in the aquatics field, simple demographic information regarding the participant themselves, as well as information on their facility's EAP and how it was created, implemented and evaluated. Questions were also asked regarding what certifications each participant had as well as what certifications their staff held. It was also asked if they would change their facility's EAP, and what specifically they would change about it.

Data Analysis

This research was conducted as both a quantitative and qualitative research study. After the surveys were completed, the researcher compiled all of the data into one document and shared it with one of the other researchers. The researcher then took that document and grouped the data from participants that gave similar answers. This grouping helped the researcher to find three common themes across the data. Initially, in order to analyze the data collected, both researchers created their own coding procedure individually. In finalizing the coding procedure, there was a collective meeting where both researchers worked together to agree upon and create one inductive coding procedure that determined which codes were used and which were not used. The coding procedure reviled three themes within the data: certifications and credentials, EAP implementation, and professional experience and education. In analyzing the demographic information, bar graphs were used to represent each multiple choice answer that was given, such

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as their age, how long they have been working within the aquatics field, and how many pools their facility had. Although not all participants recorded each answer, all participants answered a minimum of 17 out of the 23 questions. Both researchers involved in the coding procedure have a background within the aquatics field and acted as a team in finalizing the coding procedure.

CHAPTER IV

RESULTS

Participants completed a 23-question survey via Qualtrics®. A total of 186 invitations to participate were sent out, with 29 completed surveys. The survey collected information in a quantitative format using multiple-choice answers, as well as in a qualitative format using open-ended questions. Demographic information was collected about the facilities that participants worked in as well as demographics about participants themselves such as age, how long they had been working in the aquatics field, and how long they have been working at their current facility. Participants were grouped in five age-range categories, 20-29 years old (n=4), 30-39 years old (n=11), 40-49 years old (n=8), 50-59 years old (n=5), and 60 and older (n=1; see Figure 1). As shown in Figure 2, one participant reported working in the aquatics field for four-six years, one-three years (n=3), seven-10 years (n=4), 11 or more years (n=21). Participants reported working at their current facility one-two years (n=5), three-five years (n=6), six-10 years (n=9), and 11 or more years (n=9). Most facilities had one or two pools (n=19), while others had three or four pools (n=4), or five or more (n=4). From the analysis of the data collected, there were three themes that emerged: certifications and credentialing, EAP implementation, and professional experience and education.
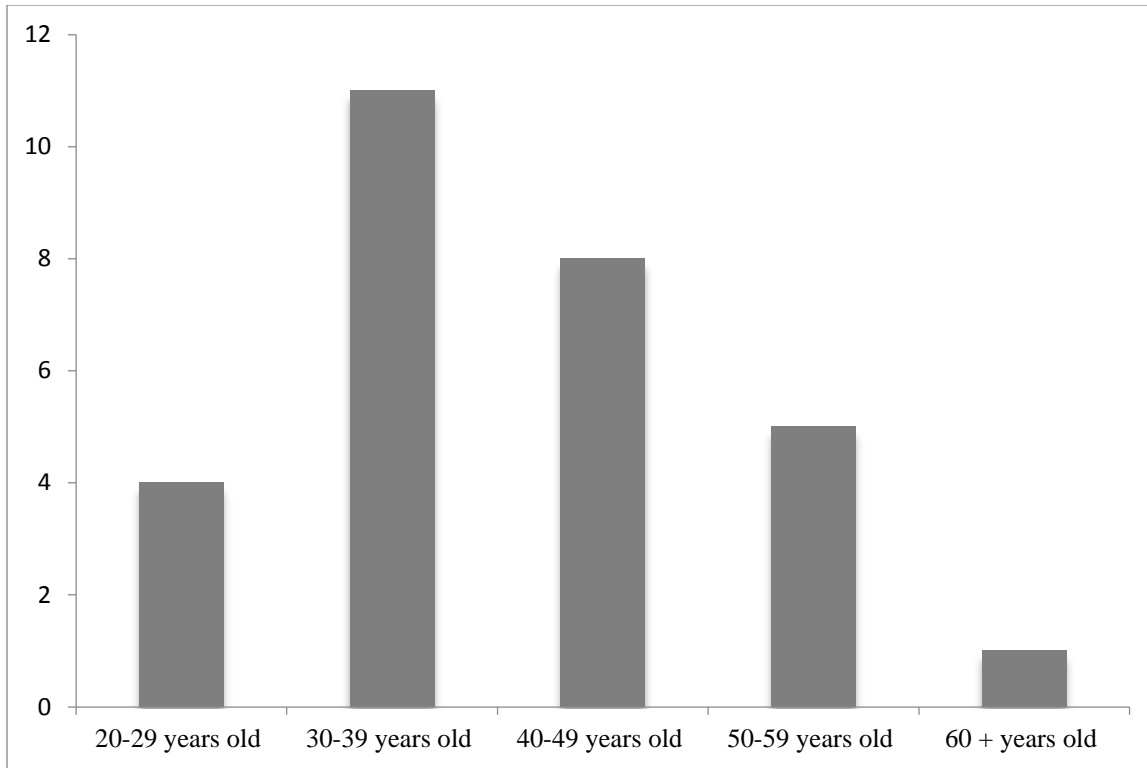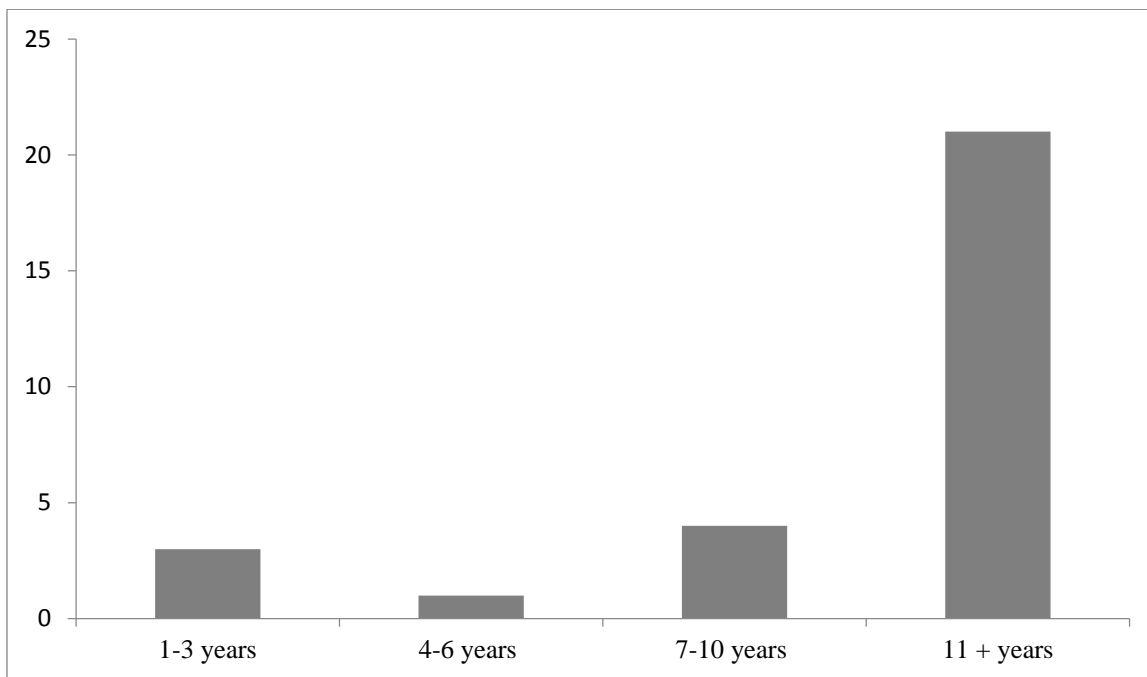
Figure 1. Ages of participants.

Figure 2. Length of time (in years) participants had been working in the aquatics field.

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The first theme that emerged from the analysis of the data was certifications and credentialing (see Table 1). This theme embodied the training, credentialing and qualifications of professionals within the aquatics field. Throughout the survey questions, participants continually referred to the different certifications that they held, and what certifications their staff held. The most common held by participants was the Certified Pool Operator (CPO; n=18) from the National Swimming Pool Foundation, following that was American Red Cross (ARC) Lifeguard Instructor (LGI; n=16; see Figure 3). It was found that many participants have obtained certifications from the ARC which has many aquatic related certifications available that participants possessed, including: CPR and AED (n=6), First Aid (n=6), Lifeguard (n=8), Lifeguard Instructor Trainer (LG-IT; n=8), and Water Safety Instructor (WSI; n=10). Although not as common as ARC certifications, other participants reported Young Men's Christian Association (YMCA) certifications such as Lifeguard (n=1), Swimming Instructor (n=1) and Swimming Instructor Trainer (n=2). Other certifying agencies were reported. from USA Swimming, a USA Swimming certification (n=2) and the Aquatic Facility Operator (AFO; n=6) from the National Recreation and Park Association were also reported (see Figure 3).

Table 1

Selected Examples From Theme of Certifications and Credentials

| Category	Examples
Certifications	"CPO, AFO, LGIT, LGI, WSI, WSIT."
and Credentials	"AFO, American Red Cross CPR, First Aid, Lifeguarding, Blood bourne pathogens and LGI for all areas."
	"CPO, AFO, County Pool Operator, LG."
	"CFO Certification, ARC Instructor, ARC Lifeguard/WSI/Facility "Manager/Disaster Management."
	"American Red Cross Lifeguarding, First Aid, CPR & AED, LGI, Certified Pool Operator"
	"YMCA lifeguard, YMCA Lifeguard Instructor, YMCA Swim Lesson Instructor, Swim Lesson Instructor Trainer"
	"American Red Cross Lifesaving, First Aid, AED, Safety Training for Swim Coaches"
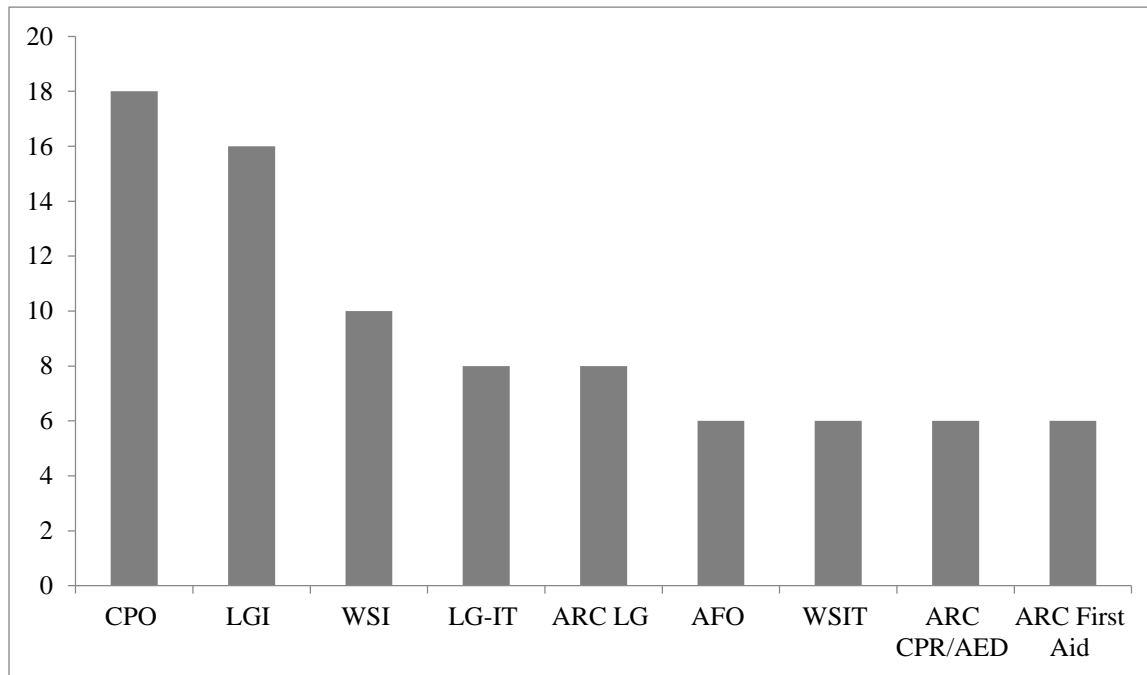
Figure 3. *Participants' certifications.*

The second theme that emerged was EAP implementation (See Table 2). This theme encapsulates the practice of the EAP within the facility as well as the staff's knowledge of the EAP, and their ability to follow their protocol. Multiple times within in the survey, participants reported that they practice their facility's EAP with their staff and most also allow their staff to have input on their EAP (*n*=19). Every participant reported that their facility does have an EAP (*n*=29). Participants reported how long ago their facility's EAP was updated, and four participants reported three-four years ago (*n*=4), one-two years ago (*n*=9), and less than one year ago (*n*=16). During their most recent update, 24 participants were involved. Participants reported having multiple individuals involved with the creation of their facility's EAP. For example, facility staff was the most common answer (*n*=15), two participants reported that they had an outside resource such as a Sherriff's Department create their EAP, and eight participants reported being involved themselves in the creation. In regards to resources and guidelines for the creation of their facility's EAP, 12 participants reported they did not follow any guidelines from outside

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organizations. Those that did follow guidelines (*n*=9) reported following: guidelines from CDC (*n*=1), insurance company (*n*=1), Model Aquatic Health Code (MAHC; *n*=2), and the ARC (*n*=5).

Table 2

Selected Examples From Theme of EAP Implementation

Category	Examples
EAP Implementation	"We train on our EAP during inservice trainings throughout the year."
	"The EAP was successful because of it lifeguards did understand their roll and we were able to get additional help quickly."
	"The EAP is successful every time it is followed in an emergency by our lifeguards."
	"A positive outcome from a drowning situation. The EAP was followed and I believe that led to the outcome being positive."
	"Continually evaluated for needed improvements."
	"Every lifeguard knows what to do in every situation."

Often there is an overlap between the management's certifications and staff's certifications. Participants reported their staff having the following certifications: YMCA Swimming Instructor (*n*=2), CPO (*n*=2), WSI (*n*=5), and lifeguarding (*n*=24; See Figure 4). Whichever certifications do or do not overlap, both management and staff need to have a full understanding of their facility's EAP. Most participants reported that they allow their staff to have input on their EAP (*n*=19). Further, participants reported why they did allow their staff to have input. One participant identified that "I want to know whether the process makes sense and

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it assess their knowledge of the execution of it as well". Many participants said that they include their staff because they are ones directly involved with the EAP and are implementing it, so it "must work for them". It was stated that their staff might have an idea of to make "a more streamlined process of emergency response or communication," another stated that they ask the question of "how could this event have been prevented?" "They might have good ideas", because "I don't have all the answers" reported two participants. One participant stated that "only the most experienced/senior student staff review EAP with Professional Staff".
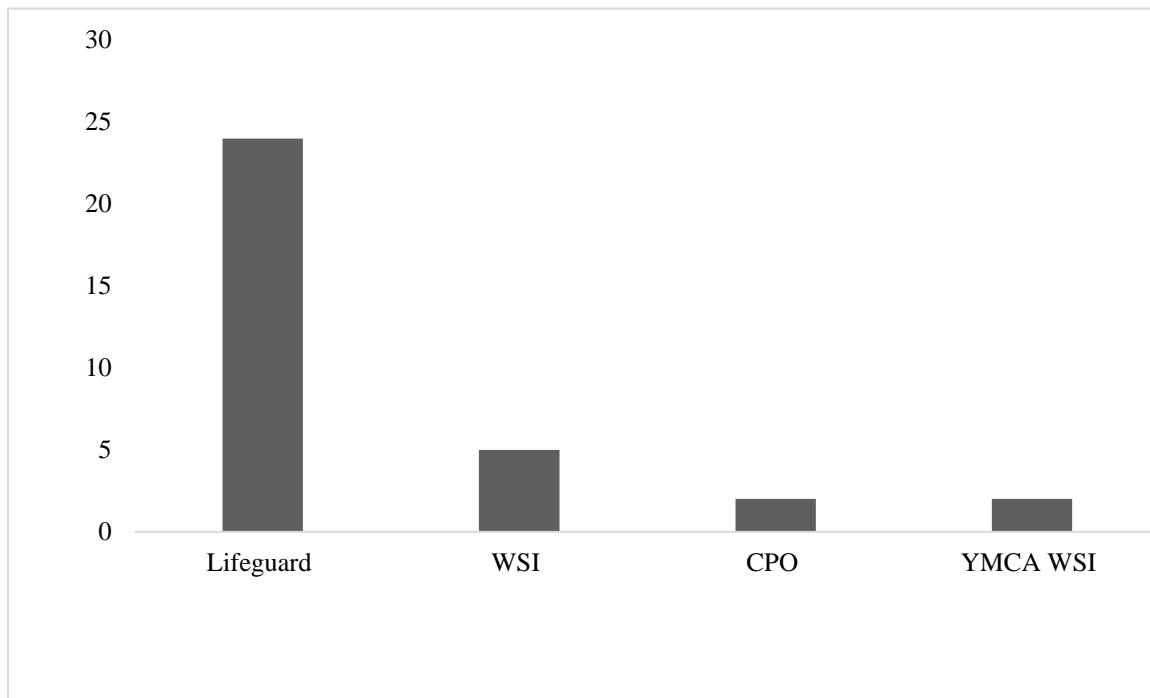
Figure 4. Participants' staffs' certifications.

The third theme that emerged was professional experience and education (see Table 3). This theme encompasses the pursuit of further education, training, professional development, and on-the-job knowledge gained from these aquatic professional participants. Their experience came from not only how long they have been working within the aquatics field or at their facility, but the education that they reported. While there is no single certification regarding only

the topic of EAPs, a combination of certifications and years of experience (*n*=6) can be used for the formalized training that participants may have. One participant called on their 10 plus years of experience, and two others reported on their 20 plus years of experience. Education can also play a role, as noted by three participants. Each of these participants reported different educational backgrounds; one reported having a Bachelor's Degree and Master's Degree in Recreation Management, another who had a minor in Aquatics, and another who reported taking multiple courses at Texas A&M in emergency action plans.

Table 3

Selected Examples From Theme of Professional Experience and Education

Category	Examples
Professional	"BS and MS in Recreation Management."
Experience and	"Multiple course from Texas A&M in emergency action plans."
Education	"Minor in Aquatics."
	"20+ years of experience."
	"All through experience working with university Environmental, Health and Safety."
	"Red Cross and Safety Committee Member at Palisades Charter HS"
	"I am a Lifeguard Instructor and as a Supervisor have taken training on Risk Management through my organization."

A total of 27 participants reported that if their facility were to update their EAP, they would be involved in some way (93%). Eleven participants reported that if they had the chance, they would change their facility's EAP. A multitude of answers where given as to why they

would or would not wish to change their facility's EAP. Those that reported why they would

change are quoted as saying that an "EAP needs to be a living plan", that they "review annually",

and their "EAP is evolving whenever we get new equipment, staffing procedures change, etc."

One participant reported that their EAP "does not meet the expectations of their facility".

Another reported that they are "currently merging EAP's from four different facilities into one

document". There were participants who would not change their facility's EAP; "w hat we have

in place is adequate and we know how to activate", and "currently it is efficient" and it is "not

really need, very simple/straight forward".

Taking this information a step further, participants reported what they would change

about their facility's EAP. There were five participants who reported that they would not change

anything about it at this time, one stated "our EAP manual is pretty comprehensive as it is, no

changes are needed at this moment". Others identified more specific things they would change

and adapt for. "Replace facility diagrams", as well as "update missing child and child abuse

protection information and reporting guidelines", is how one participant responded. Another

stated that they "would add more information regarding earthquake response, preparedness, and

active intruder incidents . . .clarifying more about incidents happening at different times of day,

how that may affect the procedure".

Participants gave examples of how their facility's EAP was successful. Some participants

shared a specific example such as:

> We had an emergency in our child watch area. The director called us, my staff responded
>
> with proper whistle blast and everyone went into action without hesitation. We were able
>
> to provide care to the child and did not have to be concerned that the pools were being
>
> covered.

Another participant also shared a more specific answer:

> In 2014 we had an unresponsive male victim with no pulse in the locker room. A patron alerted a lifeguard. The lifeguard used his radio to activate the EAP. Staff throughout the building responded and EMS was quickly called. CPR was given and the AED arrived soon after. Care from our staff continued until EMS removed the victim from our building. Victim made a full recovery.

Whereas others shared more general information such as "the EAP is successful every time it is followed in an emergency by our lifeguards". One participant stated that "lifeguards did understand their roll" when their EAP was activated. Another reported that "the practice and implementation of the plan creates a safe and efficient system to quickly keep everyone safe". One participant reported "every lifeguard knows what to do in every situation". Another participant reported that this participant:

> Can't think of a specific incident but anytime we have a rescue situation part of our de-briefing is to make sure the EAP worked as it was supposed to and if it did not for some reason we go back and figure out of staff needed further training in our EAP or adjustments need to be made.

It is important that all of the staff within the aquatic area know the EAP and can quickly and efficiently activate it and provide the proper care. Almost 45% of participants reported that they practice their EAP with their staff once a month (n=13), every six months-1 year (n=5) every two-four months (n=7), and 4 participants stated that they do not regularly practice their EAP with their staff. On top of knowing and understanding the facility's EAP, participants reported how often their staff's rescue/response skills were refreshed through in-service training. A majority of participants answered that they are refreshed six or more times per year (n=18),

however six reported only refreshing their skills one time per year (see Figure 5). A staff's

rescue and response skills should be practiced regularly.
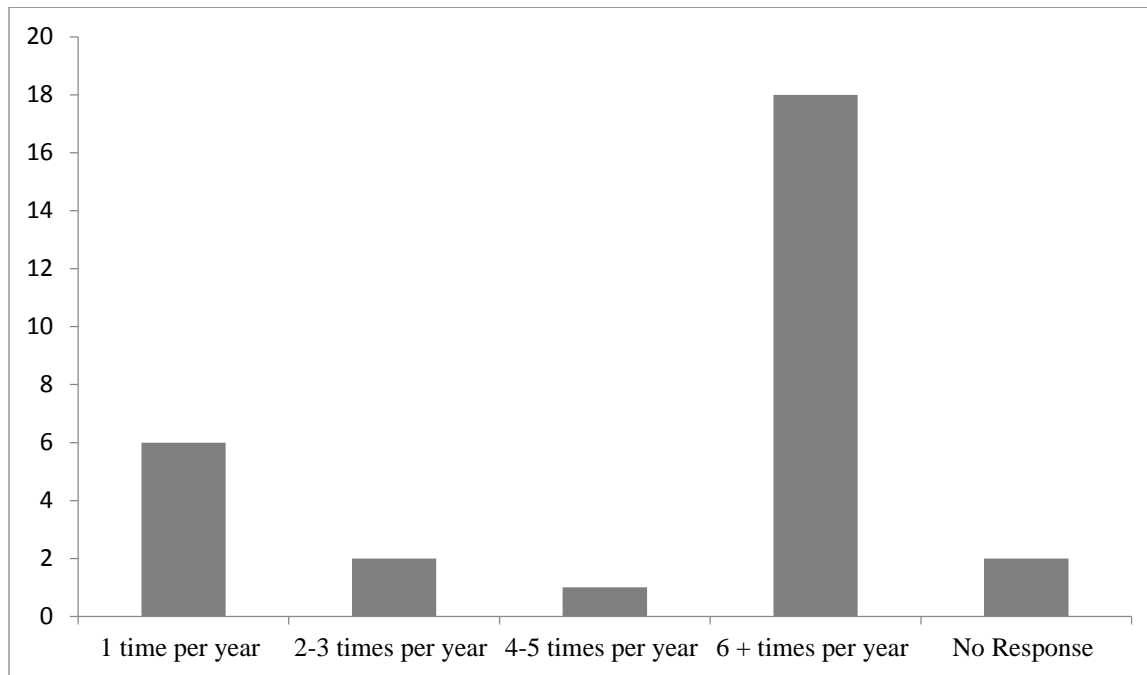
Figure 5. How often participants reported refreshing their staff's rescue/response skills.

After the EAP has been activated and implemented at a facility, participants reported that

they do hold debriefings with their staff (*n*=23). Research tells us that debriefing sessions can be

helpful and beneficial to all involved. It is a time that those that were responding directly to the

situation can give feedback on how they believe the EAP worked, and if possible how it can be

improved.

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CHAPTER V

DISCUSSION

Throughout the analysis from this study, there were three emerging themes: certifications, participant's experience, and practice of EAP. Multiple certifications were given by participants, as well as having varying levels of experience. While all participants reported that their facility has an EAP, there are differences between how often they practice their EAP with their staff, changes that they would or would not like to make within their EAP, and what certifications participants and their staff held.

Many training agencies have surfaced from participant's answers, the ARC being the most common. While there is no one specific certification that gives detailed information on the creation, implementation and evaluation of EAPs, there are certifications which do introduce the topic. Within the ARC lifeguard certification, activation and implementation of a facility's EAP is mentioned. American Red Cross (2017) breaks an EAP into three parts: at the onset of an emergency, during an emergency, and after the emergency. While the information stated here shows the general roles and responsibilities for responding to an emergency, it does not go into detail or give many specifics since each facility has their own method of activation and implementation. For this reason, it can be difficult to create one single course on this topic.

With a wide variety of certifications held by study participants it is likely that they draw their knowledge from certifications as well as education and years of experience. Within the education that participants shared, there was no common thread that occurred even though participants sought out further certifications and education. This corresponds with Yarger and Ogoreuc (2009) regarding aquatics professional development. Per Yarger and Ogoreuc (2009) there are different avenues of gaining experience, one of them being the pursuit of academic

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degrees or continuing education, which is showing professional development. This is supported here in this current research. Gaining a better understanding of an EAP is helpful to those implementing it. Classes from different universities could cover the overarching topic of EAPs, however this leads to more research being done to understand what they are teaching within these classes and how to can be related back to actual practice and implementation within different facilities. Yarger and Ogoreuc (2009) go on to state that experience counts and are critical, and that by attending professional educational courses will help to stay well-informed on the topics and trends that are currently happening.

Regardless of what certification was possessed from either the participant or their staff, 100% of participants stated they have an EAP at their facility. This is key for when an emergency happens. One participant stated "every lifeguard knows what to do in every situation" because they have practiced their EAP at their facility. Practicing your EAP will help assure that everyone knows their job and their assignment during the emergency. Curtis (2009) states the need to re-evaluate their emergency preparedness plans and take appropriate precautions to prevent and respond to emergencies. There is a key point made by Curtis: that facilities need to re-evaluate our plans to make sure they are appropriate and those that will be responding will understand their role in responding to an emergency (Curtis, 2009). To support this topic, many participants reported reviewing their facility's EAP on a consistent basis at varying times.

Changes are going to be specific to each facility and although they may be similar, each EAP is going to be unique to where they are located (Drezner et al. 2007). Not only is it important to practice the EAP at each facility, but Mokris, Hannah, and Neumann (2011) report that when you practice your EAP, you can maintain a professional and collaborative relationship with local EMS. They go on to report that practicing with hands-on training it is a way to

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facilitate learning and they are able to interact with others. This research supports this because participants reported successful examples of the implementation of their facility's EAP. When working with EMS, if they are not familiar with your facility, having a map or diagram with directions can also be helpful (Courson, 2007). While only one participant reported that they would change and update their facility's diagrams, having that information available and accessible to EMS, it can help them to get to the scenario sooner.

In the implementation of their facility's EAP with their staff, participants reported that they practice multiple times a year. This can be helpful for the staff when an incident arises which requires a response. While there is no consistent specific number of times that a facility should practice their EAP in the literature, it can be seen that the more the staff practices and understands their role, the more effective the response. In a study done by Herbert et al. (2007) on college fitness center emergency readiness, it was found that 27% of their 158 participants reported having quarterly emergency drills, which is recommended by The American Heart Association (AHA) and American College of Sports Medicine. Along with Herbert et al. (2007), Drezner et al. (2007) reported that at minimum the EAP should be practiced and reviewed yearly. This research shows strong support for this point as 24 participants reported practicing their EAP with their staff at least once a year. Walsh (2001) also states that a copy of the EAP should be distributed to everyone who has a role to play within the EAP. Participants reported that they share changes to their facility's EAP with their staff while trying to keep the protocols as consistent as possible. Continuing from there it is stated that if any changes are made to the EAP, there should be an agreement between all involved (Walsh, 2001). Within this research, this can be seen as participants reported continually updating their EAP and allowing their staff to have input on their EAP (*n*=19).

Practicing a facility's EAP can help to find any flaws or problems that need to be corrected in the EAP (Potter & Martin, 2009). This is supported in this research when participants reported that they allow their staff to have input on their facility's EAP. One stated that "I always ask where they feel we have weaknesses in our EAP" in order to find any problems before an incident happens to make any necessary changes. Throughout the body of literature, we see that many report that facilities should practice their EAP before an actual incident happens, (Courson, 2007; Courson et al. 2005; Curtis, 2009; Drezner et al., 2007; Herbert et al., 2007; Mokris et al. 2011; Potter, 2009; Walsh, 2001). This research shows that 24 participants reported regularly practicing their EAP with their staff as well we 27 reporting that their staff's rescue and response skills were refreshed at least once a year.

Practicing a facility's EAP is helpful, and having the proper equipment while practicing and knowing where that equipment is during an emergency is going to help the outcome of the incident. One participant shared that during one incident "CPR was given and the AED arrived soon after" which shows that this facility not only had the proper equipment that is necessary, but also that they are able to find it, bring it to the location of the incident, and use it if necessary during an incident. Drezner et al. (2007) and Ramos et al. (2015) touch on the chain of survival within emergency preparedness. While the chain of survival according to Drezner et al. (2007) is not specific to aquatic environments, it still follows a comparable pattern for aquatics facilities and has four links. Ramos et al. (2015) report that the chain of drowning survival has five links, the extra link is due to the extraction of the victim(s). The common thread between the two is the use of an AED. This research supports both chains with the use of an AED. While only two participants specifically reported having an AED or using it during an emergency, research has shown that having this piece of equipment can be helpful in certain incidents. Practicing, being

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prepared and knowing how and when to act in an emergency are important for those who are responding. There is no way of knowing what type of incident is going to occur. Curtis (2009) brings up cases of tragic shootings that have happened between 1966 and 2009. While this research looked at the shootings that happened within the United States in higher education institutions, the author still brings up the fact that being prepared, responding and re-evaluating an institution's plans should be high on the priority list. Although the topic of a shooter within a facility was only brought up once within the data when a participant reported that they "would add more information regarding . . . active intruder incidents" into their facility's EAP. As another participant stated, facilities need to "look at the approach to both land and water rescues".

Preparation, prevention, response and recovery are the four key components when working with an EAP (Curtis, 2009). Both preparation and prevention happen before an incident has occurred to prepare the staff and find any weaknesses that might be in the plan. Participants reported looking for weaknesses that they have in their EAP as well as practicing with their staff to ensure that the appropriate response can be made. Regarding the response, this is when the staff implement their EAP. This includes assigning responsibilities that are previously set within the EAP (Curtis, 2009). Participants reported tasks and responsibilities were laid out with their facility's EAP (n=9). In the recovery component Curtis (2009) reports that you should promote emotional healing of all parties affected. Within this research, this can be seen as debriefing, which 79% of participants reported that they do with their staff. Going deeper into debriefing, Tannenbaum and Cerasoli (2013) report that this is a simple, yet powerful tool. Within the aquatics field, there is potential for a facility and their staff to be a part of a serious incident. While staff still need to follow the EAP at their facility, it can be difficult for them to return to

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work after that incident in some cases. The meta-analysis conducted by Tannenbaum and Cerasoli (2013) report that debriefings help to improve performance by 25%. With this research showing that most participants are holding staff debriefings (n=23), this point is supported and is occurring in the facilities that participants work in.

Conclusions

The findings in this research data prove the hypothesis wrong. Participants did have a robust knowledge of EAPs. This research gives an insight to what these managers know, understand, and the actions that take place in their facility. This research was able to show three common themes throughout the data collected from all participants (certifications and credentials, EAP implementation, and professional experience and education).

The hypothesis was proved wrong due to the multiple certifications and credentials that these aquatic facility managers have obtained. Participants showed they were practicing their EAP within their facility with their staff as well as making any adaptations that were deemed necessary. Multiple times participants called upon their years of experience and the different levels of education they have received to help them with different aspects of their facility's EAP.

Future Research

Much of the information regarding EAPs have come from the study area of Athletic Training. While the information given can be adapted to fit for an aquatics facility, there deems more research to be done within these facilities so show more specific information regarding the creation, implementation and evaluation of an EAP in that environment. Building on this area, there is limited research that has been done regarding the content knowledge of aquatic facility managers. Future research should be conducted to gather deeper information to show more of what they know. Research should also be conducted to include other aquatic facilities such as

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water parks and resorts. Although their protocols may be different, there is still not much research available on this topic as a whole.

While the current body of literature shows what should be included within an EAP, there is not commonly used method of changing procedures or any part of an EAP. Further research needs to be conducted regarding what should be in an EAP, how to adapt your facility's EAP and how to implement your facility's EAP effectively within aquatic facilities. This is an area where more research could be conducted to show best practices.

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Appendix A

Initial Email

Dear ,

Hello, my name is Emily Wujcik and I am currently a Graduate Student at Indiana University of Pennsylvania (IUP). I am working on my research thesis, and you have been selected to participate. Below there is a link to a short survey for you to fill out regarding Emergency Action Plans (EAP), by clicking on the link, you are giving your consent to participate in this study. At the beginning of this survey, you will find information regarding this research. The survey should not take more than 25 minutes to fill out, and your responses will be put together with others who have also completed the survey. I appreciate you taking the time to fill this out.

https://iup.co1.qualtrics.com/jfe/form/SV_4Sfo4rnVb59bfa5

Thank you,

Emily Wujcik

Appendix B

Follow-up Email

Hello ,

My name is Emily Wujcik, and I am currently a Graduate Student at Indiana University of Pennsylvania (IUP). I am working on my research thesis, and you have been selected to participate. Below there is a link to a short survey for you to fill out regarding Emergency Action Plans (EAP). At the beginning of this survey, you will find information regarding this research. If you have already completed this survey, please disregard this email. The survey should not take more than 25 minutes to fill out, and your responses will be put together with others who have also completed the survey. I appreciate you taking the time to fill this out.

https://iup.co1.qualtrics.com/jfe/form/SV_4Sfo4rnVb59bfa5

Thank you,

Emily Wujcik

Appendix C

Cover Letter and Survey Questions

Indiana University of Pennsylvania

Principle Investigator:	Co-Investigator:
Emily Wujcik	Dr. Richard Hsiao
Sport Management Graduate Assistant	Professor Kinesiology, Health & Sport Science
E.Wujcik@iup.edu	R.Hsiao@iup.edu 724-357-0123

You are invited to participate in this research study on a voluntary basis. The following paragraphs will give you more information on this study. The purpose of this study is to explore the content knowledge of aquatic facility managers regarding Emergency Action Plans (EAPs).

You have been invited to participate because you are the aquatic facility manager at your facility within the continental United States. The information gained from this study may help to understand the knowledge base of aquatic facility managers, such as yourself. If you agree to participate, there is a survey in which you will need to complete. The survey should take no longer than 30 minutes to complete. The questions will all be in relation to your knowledge of Emergency Action Plans.

You are free to decide not to participate in this study or withdraw at any time without adversely affecting your relationship with the investigators or IUP. If you choose to participate, you may withdraw at any time by notifying the principle investigator or co-investigator that are listed above. Subsequently after your request to withdraw, all information pertaining to you will be destroyed. If you choose to participate, all information will be kept strictly confidential and your name, or facility name will not be used directly in this study. Your responses will be considered along with those from other participants in this study. All of the questions will pertain to your EAP, and there will be nothing of a personal or confidential nature.

If you are willing to participate in this study, please complete the survey fully. By clicking on this link for the survey, you are giving your consent to be a participant in this study. The research team greatly thanks you for your interest and time.

THIS PROJECT HAS BEEN APPROVED BY THE INDIANA UNIVERSITY OF PENNSYLVANIA INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS (PHONE: 724-357-7730)

Please enter your current email address in which you are receiving communication regarding this study.

_____

What is your age?
- ○ 20-29
- ○ 30-39
- ○ 40-49
- ○ 50-59
- ○ 60 +

What training and/or certifications do you possess relating to aquatics or aquatic facility management?

_____

How long have you been working in the aquatics field?

○ 1-3 years

○ 4-6 years

○ 7-10 years

○ 11 + years

How long have you been working at your facility?

○ 1-2 years

○ 3-5 years

○ 6-10 years

○ 11 + years

Does your facility have an Emergency Action Plan (EAP) or Emergency Response Plan (ERP)?

○ Yes

○ No

Who designed your facility's EAP?

[   ]

How long ago was your facility's EAP updated?

○ Less than 1 year ago

○ 1-2 years ago

○ 3-4 years ago

○ 5 + years ago

○ I'm not sure

Were you involved with that update?

○ Yes

○ No

Do you regularly practice your EAP/ERP with your staff?

○ No

○ Yes, once a month

○ Yes, every 2-4 months

○ Yes, every 6 months - 1 year

If you were to update your EAP/ERP right now, would you be involved in that update?

○ Yes

○ No

What formalized training do you have in Emergency Action Planning and/or creating Emergency Action Plans?

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How many pools does your facility have?

○ 1-2

○ 3-4

○ 5 or more

What type of training or certifications does your staff possess?

○ Lifeguarding

○ Water Safety Instructor (WSI)

○ Other

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How often are your staff's rescue/response skills refreshed through in-service training?

○ 1 time per year

○ 2-3 times per year

○ 4-5 times per year

○ 6 + times per year

If given the chance, would change your facility's EAP?

○ Yes

○ No

Please explain why you would or would not change your facility's EAP from your previous answer.

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If given the chance, what would you change about your facility's EAP? (Please be as detailed as possible.)

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Did you/are you following guidelines from an outside organization forthe creation and updating of your facility's EAP?

○ No

○ Yes

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○ I'm not sure

Can you share an example of how your EAP was successful?

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Do you allow your staff to have input on your Emergency Action Procedures?

○ Yes

○ No

Why do you/don't you allow your staff to have input on your Emergency Action Procedures?

Do you hold staff debriefings after an emergency situation?

◯ Yes

◯ No