

Safety Training for Swim Coaches

Supplement

American Red Cross



American Red Cross



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SUPPLEMENT



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This supplement is part of the American Red Cross Safety Training for Swim Coaches program. Visit redcross.org to learn more about this program.

The emergency care procedures outlined in this book reflect the standard of knowledge and accepted emergency practices in the United States at the time this book was published. It is the reader's responsibility to stay informed of changes in emergency care procedures.

The materials on aquatic facility safety included in this Supplement, including the sample facility checklist and sample emergency action plans, are for general guidance in regards to the role a coach may have as part of an aquatic facility team. These documents do not constitute a complete facility safety plan with comprehensive supporting documents. Any aquatic facility safety plan and supporting documents, including checklists, should be developed by safety professionals specifically for your facility.

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Introduction

This supplement provides material for the American Red Cross Safety Training for Swim Coaches Blended Learning course. Successful completion of this course meets the water safety and first aid requirements of the **USA Swimming Coaches Safety Curriculum**.



This supplement serves as a resource for the online content of the blended learning course. It can be used to augment the concepts and topics and to review information presented in the online portion of the course. The information highlights possible life-threatening and potentially hazardous situations in and around the water and the techniques and skills for preventing and dealing with them. This supplement also provides helpful information about workout and warm-up procedures, racing starts, event safety, emergency planning, electrical safety, weather and environmental conditions, and handling of medical conditions and injuries, including first aid. The material presented in this supplement may be adapted to meet the individual needs of each aquatic facility or swim club. Throughout this supplement, there is an icon that identifies links to resources for use by swim coaches. When viewing this supplement online, click on the link to access the information directly.

A facility-based, in-water skills session is a requirement of the blended learning course. Skills sheets for each of the required skills are provided at the end of the supplement.

Also, terms common to swimming are used throughout. Terms or phrases that may be unfamiliar to new coaches are set in italics. The definition is provided in parentheses immediately following the term or phrase. These terms are also defined in the glossary at the end of this supplement.

CHAPTER 1

RESPONSIBLE COACHING



GUIDELINES FOR RESPONSIBLE COACHING

Coach Brown is a good judge of talent and she has her eye on Jenna, a new 9-year-old swimmer. After only a few weeks of practice, Coach moves Jenna into the 12-to-14-year-old training group. This group practices five days a week. Jenna is not very happy to leave her friends and tells her parents that swimming with the older kids is not fun. Coach Brown continues to push Jenna, often putting her into longer distance events. After a few months, Jenna develops shoulder and back pain and can barely complete a 2-hour workout. Her parents tell Coach Brown that they are taking Jenna to a different club. Coach is stunned and hurt. Has she been a responsible coach?

As a coach, you might tend to focus on outcome. How fast did my swimmers swim? But there's much more to being a good coach than having fast swimmers. A coach is a leader, a role model and a teacher.

First, it's true. Outcomes and best times are important. Swimmers may get discouraged if they are not improving. As a coach, you provide the guidance and instruction they need to achieve their goals. So being a good and responsible coach means helping all swimmers develop and fine-tune their skills. Along the way, you will also need to teach them about good sportsmanship, the excitement of competition and the importance of teamwork—in part by setting a strong example yourself.

Second, a good and responsible coach helps to achieve a safe environment so that swimmers are free to pursue their goals. By setting an example of common sense, following the rules and being observant and aware, you will help prevent injuries and teach your team members to do the same. This is perhaps your most important job. Follow these guidelines to promote a safe and enjoyable environment for your swimmers:

Figure 1-1



- Remember what motivates athletes, particularly children, to participate in their sport (Figure 1-1).
- Know the rules of the sport and insist that your athletes know and follow them.
- Understand the basics of skill development and training methods appropriate for the level of your athletes. Keep up-to-date about coaching based on the principles of growth and development. Check out the **USA Swimming** website for access to valuable information about athlete growth and development.
- Follow the safety guidelines of USA Swimming and its *Local Swimming Committees*, or *LSCs* (regional governing bodies) or other national governing body, your facility and your individual club.
- Teach sportsmanship by example.



- Balance constructive criticism with support and praise. Never ridicule or shout at athletes for making mistakes or losing (Figure 1-2).
- Assist facility management with their safety plan by helping to monitor equipment and the facility.
- Educate athletes about the dangers of nutritional and substance abuse.

Figure 1-2



The fact is, a safe and enjoyable environment starts with an engaged and responsible coach—that is, a coach who models safe behavior by checking out the facility and equipment, knowing how to plan great swim sets and activities, adapting instruction to the swimmers' abilities, making safety a priority by directly supervising the swimmers and being aware of any medical conditions that could affect a particular swimmer. When done in a way that is positive and supportive, you will help your swimmers be their best, regardless of whether they win or lose. And that is the true hallmark of an outstanding coach! Follow these practical tips to help ensure responsible coaching:

Figure 1-3



- Plan for the swimmers' long-term skill development, tailoring instruction to their needs, skills and abilities.
- Direct and supervise swimmers under your care, making sure they are coached by qualified coaches including you and the other coaches who work with your team (Figure 1-3).
- Do your part, as a coach, to watch over the aquatic facility and equipment for safety on a regular basis. Document in writing any deficiencies and need for repairs and report them to the facility management. Check out the Resources section of the course for a sample facility safety checklist.
- Warn swimmers and parents of minors about the inherent risks related to the sport of swimming and the aquatic environment (See *Common Accident Areas*).
- Be aware of swimmers' medical conditions. Establish a procedure so that you are informed of any pre-existing or acute medical conditions immediately.
- Obtain the swimmers' emergency contact information and have it easily accessible during practices and meets.





Common Accident Areas

According to statistics from USA Swimming, the most common areas where accidents occur during practice or meets are:

- In the water, during turns or finishes, collisions with other swimmers or on entering or leaving the water.
- On the pool deck, from slipping on the deck surface or tripping over pool or training equipment.
- Other areas within the aquatic facility, such as in locker rooms, on bleachers or in hallways.

The adverse effect of many accidents may be minimized or eliminated by the safety-trained swim coach who is alert and aware of potential hazards around practice and swim meet areas.

- Provide training and competition opportunities, making sure that practices and meets are appropriate for each swimmer's ability and experience.
- Know and understand emergency procedures, including your role in an emergency. Be aware of the facility's *emergency action plan*, or *EAP* (a written plan detailing how coaches and facility staff are to respond to a specific type of emergency) and know how to perform first aid measures.
- Be a safety role model.
- Be able to say no to swimmers about unsafe situations.
- Frequently review the safety procedures and rules with your athletes.

So, has Coach Brown been a responsible coach? Unfortunately Coach Brown was so excited that she made several mistakes. Judging "the talent" of a 9-year-old is not recommended because early success does not necessarily translate into future success. Jenna may be an "early maturer" who is bigger and stronger than her peers. Jenna was just starting out in swimming and wanted to have fun with her friends. Coach Brown should have kept Jenna with her peer group and figured out ways to challenge Jenna and her abilities. Swimming longer distance events is a good choice for all swimmers, but the rapid increase in training may have contributed to Jenna's shoulder and back pain. A 9-year-old should be concentrating on technique and skill development and all increases in training should be progressive, gradual and age-appropriate.

PROFESSIONAL CONDUCT AND LEGAL RESPONSIBILITIES

Once or twice a week, Coach Smith arrives at the pool after his 11- to 17-year-olds show up. He has told them not to enter the water until he gets there, although they do not always listen. He has also told them to start dryland if he is not there, leaving the necessary equipment such as the medicine balls, stretch cords and hand weights unlocked so that the swimmers can get them. He has asked the older athletes to teach and instruct the younger ones and expects them to be responsible until he arrives. Coach Smith is also the pool manager and may be required to address facility issues if they arise during practice. Is Coach doing anything that may be considered negligent?

You have every intention of being the best coach you can be. But did you know you also have a legal duty to do so? Acting professionally at all times is a must, not only for the sake of the participants, but also for your own protection.

Look at your written job description and contract closely. These often specify your formalized duties. In addition, legal duties for coaches have been established on specific facts, through various court cases. Under specific circumstances, courts have held these duties to include:

- Duty to properly instruct an athlete.
- Duty to properly supervise an activity.
- Duty to warn of inherent dangers in a sport.

- Duty to provide a safe environment and equipment.
- Duty to properly condition an athlete.
- Duty to give care in an emergency.
- Duty to enforce rules and regulations.
- Duty to fairly classify and group participants for competition according to skill level, age, experience, etc.

As a general rule, courts have held coaches to a standard of conduct based on what is expected of a reasonable and prudent person in the same or similar circumstances. Failure to meet that standard can be considered negligence. Put another way, negligence is the failure to do what a reasonable and prudent person would do. It is also doing something that a reasonable and prudent person would *not* have done. This matters especially because negligence is closely associated with injury. Know your responsibilities and act accordingly!

Acting reasonably and prudently to prevent injury involves the use of best practices. These best practices include:

- Reasonable planning to anticipate potentially dangerous circumstances and situations. As a professional, a coach should reasonably plan for all foreseeable hazards.
- Safety through organization and planning. Well-organized, planned activities and workouts are more likely to be safe than chaotic, disorganized situations.
- Record-keeping. All injuries and accidents should be reported as determined by the facility and/or national governing body, such as USA Swimming, the National Collegiate Athletic Association, the Amateur Athletic Union, the National Federation of State High School Associations, the YMCA of the USA and the Federation Internationale de Natation. For example, USA Swimming requires that all accidents be documented on **Report of Occurrence forms**. Coaches should also keep records of safety hazards that have been documented and reported.



Is Coach Smith being negligent? Well, he made several errors in judgment that a court might consider negligent. First, athletes should never be on the pool deck or in the pool unsupervised, nor should they be doing any dryland training without the direct supervision of a coach. Moreover, older swimmers should not be made responsible for supervising younger swimmers. And what if Coach Smith needed to leave the pool deck to take care of a facility issue? In this case, he could not rely on his older swimmers to watch the rest of the group. Instead he would need to make sure that there was another qualified coach available to provide supervision while he was gone.

CREATING A SAFE AND POSITIVE SPORT ENVIRONMENT

Coach McAvoy, a young male coach, has a great group of teenage female athletes who joke around a lot with each other and generally have a great time. Coach sometimes tells slightly "off color" jokes to the girls, but they know it is all in fun. He gives all the athletes his personal cell phone number and e-mail address so that they can call, text or e-mail him at any time. A colleague tells Coach McAvoy that some of the things he does with the girls may seem inappropriate to an outsider, but Coach laughs

it off. He says he shares everything, including all the text messages and e-mails from the girls, with his wife. Do you see any reason for concern?

Providing for the safety of your swimmers extends beyond preventing injuries and mishaps. It is also about protecting them from abuse and inappropriate behavior—whether bullying, physical abuse, sexual abuse or any other kind of harmful act.

The good thing is you will not be alone in this effort. For starters, your facility or swim club shares this responsibility, in part by ensuring that the coaches they hire meet requirements put in place for the protection of swimmers. If you as the head coach are responsible for hiring assistants, you need to know and adhere to these criteria, too. Anyone involved with the swim team or athletes, such as coaches, assistants, volunteers and staff, may be required to undergo background checks and pre-employment screening. For example:

- Background checks, which involve checking for a criminal history or searching for criminal records. These checks have become a standard practice in the youth sports industry and are a must for coaches, officials and others having frequent and direct interaction with athletes.
- Pre-employment screening involving thorough hiring practices, often including the following:
  - Review and check of past employment references.
  - Verification of the highest level of education completed.
  - Evaluation of a state motor vehicle report.

Check with your national governing body for specific requirements. For example, USA Swimming requires that individuals successfully pass a criminal background check to become a non-athlete member. In addition, clubs hiring individuals must complete pre-employment screenings on any potential employee.

Beyond hiring considerations, your responsibility as a coach includes raising awareness of and actively working to prevent abuse in the sport. In this case, knowledge is indeed power. By understanding the types of abuse possible and how to recognize the signs of *grooming behavior* (when an abuser targets a vulnerable child, forms a relationship with him or her as friends or equals and begins to desensitize the child to touch), you will be more empowered to enforce defined boundaries so that any violations of these boundaries can be more easily spotted (see *Types of Abuse*).



Types of Abuse

Although abuse can take on many forms, common examples include the following:

- Sexual misconduct (including sexual abuse, sexual harassment and rape; involving sexual abuse of a minor by an adult, sexual contact by a person in a position of power or peer-to-peer sexual abuse)
  - Using suggestive sexual remarks
  - Using sexually graphic literature, sexual advances, demands of sexual favors, sexually oriented comments or innuendoes, taunts about the body or dress, sexual or homophobic graffiti, intimidating sexual remarks, fondling, and/or bullying on the basis of sex

Continued on next page

Types of Abuse *continued*

- Using sexual violence, such as sexual assault, sexual battery, rape and sexual coercion
- Forcing or luring an athlete to engage in sexual activities regardless of whether the athlete knows what is happening
- Having physical contact involving penetrating and nonpenetrating acts
- Having athletes look at sexual images or watch sexual activities, or encouraging athletes to behave in sexually inappropriate ways

- Physical abuse
  - Touching an athlete in a non-instructional or non-congratulatory manner
  - Touching an athlete's private body part or area
  - Having an athlete perform a physical act irrelevant to the sport and intended to embarrass, degrade or punish the athlete
  - Having an athlete continue to perform a physical act that compromises established policies for conditioning and safety
  - Requiring the athlete to use performance-enhancing drugs or other drugs not prescribed by a physician
  - Failing to stop an activity in which the athlete is obviously being subjected to physical harm
- Emotional abuse
  - Telling an athlete he or she is worthless, disliked or unskilled
  - Using derogatory or discriminatory language that belittles the athlete or group
  - Continuously using criticism, sarcasm or name-calling, causing the athlete to feel belittled
  - Imposing expectations on the athlete that are inappropriate to the athlete's developmental ability
  - Isolating an athlete from normal social interactions with teammates
- Verbal abuse
  - Excessively singling out of an athlete negatively
  - Using profanity or degrading language
  - Yelling or screaming at an athlete; blaming the team or group for failures
- *Bullying* (the aggressive use of power to control or harm someone in a weaker position; oral, written, electronic or other technological expression, physical act or gesture or any combination)
  - Name-calling, teasing or spreading rumors
  - Leaving an athlete out of groups; emphasizing that the athlete is not wanted
  - Physically punching, hitting or shoving an athlete
  - Cyberbullying, or using the internet (e-mail, texting, social media or other technologies) to harm an athlete
  - Using a win-at-all-costs attitude
- Harassment
  - Using racial, ethnic, homophobic or gender-based insults
  - Using written or verbal abuse or threats, physical contact, intimidating remarks, inappropriate touching or bullying, offensive comments or innuendoes, or taunts or threats

As with any safety issue, your best bet is to leave nothing to chance. This means being proactive and making sure you understand and communicate to your team the policies that are in place, including all rules and regulations, such as:

- Code of conduct
- Typical training schedules
- Monitoring of facility areas such as locker rooms
- Communication (including electronic communication) among team members, between coach and parents, and between coach and athletes
- Parent involvement
- Bullying
- Travel policies
- Procedures for dealing with concerns or complaints
- Disciplinary procedures

Reporting Misconduct and Abuse

Finally, despite your best efforts, incidents can occur. These might involve actual abuse, possible "red flag" violations of a policy, or inappropriate or suspicious behavior. Red flags are clues to, or warning signs of, possible behaviors or actions that violate boundaries. However, in other situations, these actions (for example, hugging a child or giving the child a special gift) might be considered acceptable. If this happens, you need to know it is your responsibility as the coach to report any sexual misconduct, boundary violation, suspicious or red flag behavior or any other inappropriate conduct to facility management, your national governing body (if any) and/or local law enforcement.

National governing bodies often have established policies and guidelines. Various training programs are also available to support you in preventing abuse. Check with **USA Swimming** or your national governing body, such as the **National Collegiate Athletic Association**, the **Amateur Athletic Union**, the **National Federation of State High School Associations**, the **YMCA of the USA**, and the **Federation Internationale de Natation** for more detailed information. For example, USA Swimming has a Code of Conduct, Best Practice Guidelines, Model Policies as well as a Safe Sport Handbook. It also offers several training modules for preventing and recognizing signs of abuse. The **Department of Health and Human Services** also has valuable information related to bullying.



So what about Coach McAvoy? His behavior is inappropriate. While most of the swimmers may laugh at his off-color jokes, others may interpret the behavior as embarrassing or harassing and it could be considered sexual misconduct. Additionally, giving the swimmers his personal cell phone number and e-mail address violates the boundary of coach and swimmer. The content of communication between a coach and athlete must be professional and for the purpose of communicating information about team activities.



CHAPTER 2

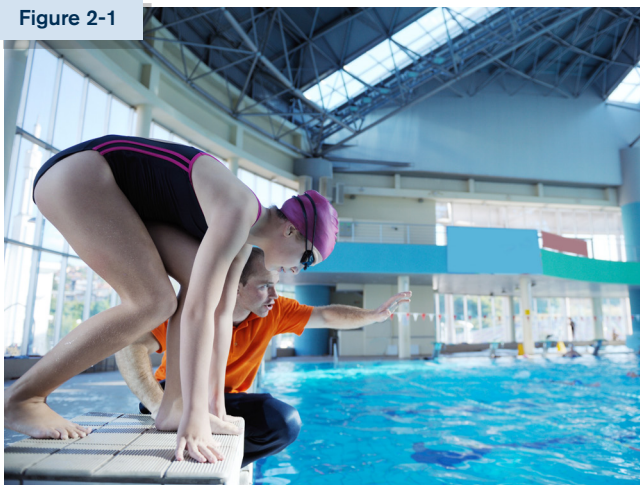
SAFETY AWARENESS IN COMPETITIVE SWIMMING



COACHING YOUR SWIMMERS

Coach Ryan decides that he wants his swimmers to train at a higher intensity level this season, which starts after a two-week break. On the first day back, he gets right to work! Coach warms them up, then announces a long training set that the swimmers had done midway through the previous season. He tells the swimmers, "I just want to see what you can do." The workout concludes with sprints and a session of dryland training. After a few days of high-intensity workouts, many of the swimmers are reporting injuries, muscle soreness and pain. Coach Ryan thinks they just need to "toughen up." Do you see anything wrong with his training plan?

Figure 2-1



When coaching, you are teaching your athletes how to improve their technique as well as how to swim competitively. But with differences in ages, physical conditioning, mental status, fitness, skill levels and individual goals, training is definitely not "one size fits all." As you get to know your swimmers, you'll be able to better determine what works best for them (Figure 2-1). Some factors you will consider are the type, frequency, duration and intensity of the workouts. And each of these factors has a safety component. For example, when increasing intensity, be careful not to push the intensity before the swimmer is ready. Typically, you would increase duration first before increasing the intensity. A good rule of thumb is to increase training intensity, distances and time gradually, by about 10 percent each week. The following points can help guide you in developing a training plan:

- Teach correct technique, which helps prevent chronic and overuse injury. Incorporate drills and skill development that develop correct technique into your training plan.
- Incorporate warm-up and cool-down as structured segments of the workout, ensuring that all swimmers participate in them.
- Balance fitness conditioning and skill development.
- Increase training intensity, distances and training time gradually. Keep in mind this rule of thumb: For inexperienced athletes or athletes returning from injury, increase intensity by 10 percent each week. More experienced swimmers can progress more quickly.
- Instruct and supervise strength and dryland training appropriate to the level of the athlete.
- Encourage athletes to report injuries, creating an atmosphere that encourages openness.
- Provide adequate rest and recovery.

Both USA Swimming and the American Swimming Coaches Association (ASCA) provide a wide variety of resources for training. Examples include tips and training, in-water training videos, planning age group practices, downloadable forms for season planning and coaching resources.



What about Coach Ryan? There was nothing wrong with Coach Ryan's desire to increase the level of intensity for his swimmers. However, he cannot accomplish this on the first day of practice, especially after a two-week break. Rather, he needs to develop a plan to gradually increase the intensity.

SWIM PRACTICE SAFETY

As you likely understand at this point, providing for the safety of your swimmers is not just about the time they spend in the water. You need to make sure your training sessions are organized so each and every one of your swimmers stays safe, whether in the pool, on the pool deck, in the locker room or during the time before and after practice (Figure 2-2).

Figure 2-2



This can be quite challenging! Imagine, for example, how your concerns might change if you have a large group in a small pool, or have limited lanes for practice. Here, you might need to readjust the training plan to address more swimmers than usual in a lane. You might be responsible for swimmers of all ages and skill levels, each requiring a different approach to safety. You may need to ensure that enough coaches are available on deck to provide adequate coverage of each group. You could even have a significant number of swimmers who have never been part of an organized swim team. In this case, you may need to adjust the time for practice, for example, having that group come in earlier than other groups and practicing for a shorter time to allow them to progress in their development.

IMPORTANT SAFETY CONSIDERATIONS

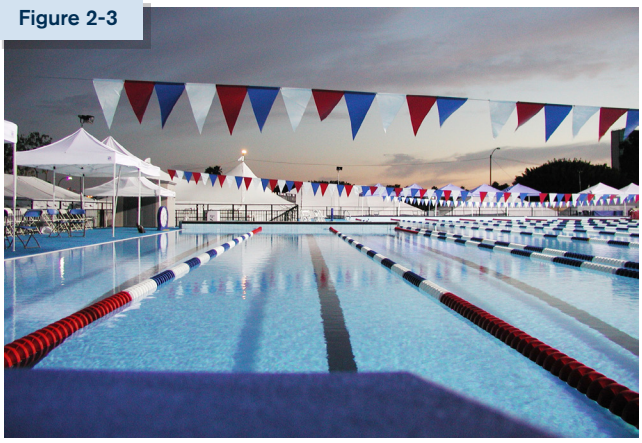
Remember, as the coach, you are the safety role model. You will show your concern for safety in the way you consider the workout and facility circumstances when planning activities. And you will show it by consistently making sure the entire team—coaches and assistants included—follow the facility rules and state and local laws and regulations. Safety is job number one as a coach, and you can bet your attitude about it will go a long way toward developing a team of safety conscious swimmers, too.

To help achieve safe water and workout activities, follow these guidelines:

- Ensure a qualified coach is on deck before any swimmers enter the water and remains on deck until all the swimmers leave the pool deck. When on deck, the coach must constantly supervise the swimmers, keeping his or her eye on them at all times.
- Scan the facility to make sure that basic equipment is in place (Figure 2-3).

- Establish team policies governing each swimmer's actions before, during and after each training session and meet.
- Make sure swimmers understand the use of training equipment. Inspect stretch cords to make sure they are in good condition. When in use, ensure that the cords are secured to a stationary object.
- Ensure athletes are supervised or safely exit the facility within a reasonable amount of time after the conclusion of the swim practice.
- Prohibit swimmers from using the pool's diving facilities during the training session.
- Choose swim practice water games carefully and explain them thoroughly to the swimmers so that risks are identified.
- Follow the same warm-up procedures at practices that swimmers follow at meets. Designate procedures for entry, including where to enter the pool. Always enforce a feet-first entry into the water. Remember:
  - Racing starts at swim meets are only allowed when indicated by swim meet marshals and under the marshal's supervision.
  - Racing starts at practice are only allowed when instructed and supervised by a qualified coach.
  - Swimmers need to look before entering the water.
  - Starting blocks are used only under supervision.
  - *Circle swimming* (a technique that allows multiple swimmers to swim in the same lane simultaneously) is used for multiple swimmers.

Figure 2-3





ORGANIZING YOUR SWIM PRACTICE

Coach Jones gets a call from her age-group assistant saying that he will not be at practice today. To make matters worse, when Coach Jones arrives at the pool, the pool manager tells her apologetically that she will not have use of all eight lanes tonight. Instead she will have to consolidate all the swimmers into five lanes. Normally she has a senior group of 25 swimmers in five lanes, and 20 age-group swimmers in the other three lanes. Coach Jones has planned a long and difficult freestyle set for her senior group tonight and is determined to stick to her workout plan. So she puts a few of the age-group swimmers in each lane and lets them do the senior workout to "see how they do." Is she creating an unsafe situation? What else could she have done?

As you have learned, preparation and planning are important in all aspects of coaching, and running an organized swim practice is no different. Thus really, what could go wrong? Well, the truth is, quite a bit! One of your assistants could get a flat tire on the way to work. Your carefully chosen relay teams could be decimated by the stomach flu. Or you could be met at the pool by an apologetic facility manager who forgot to inform you about the special workout class that will be taking up two of your lanes.

What is a coach to do? Adapt, of course. And fast! An unexpected glitch might mean revising your entire workout plan or just adjusting your plan for a specific group or activity. Regardless of the changes needed, you will always need to keep safety in the forefront, thinking about the number of swimmers, the space available and the size of the pool. Plus, you will need to consider the level of instruction needed by the swimmers, as well as their ages and abilities. For example, are they beginner swimmers who need to learn how to do flip turns or are they more advanced swimmers who need to refine their stroke techniques? Consider the following for organizational challenges related to pool size and age:

- Pool Size
  - For a short course pool, it would potentially be more crowded but easier to view and account for all swimmers.
  - For a long course pool, there would be more space, but it would be more difficult to supervise because the swimmers are spread out over a significant distance.
- Age
  - Younger swimmers require closer supervision and usually more instruction, and often have short attention spans. However, their bodies are smaller, which allows more swimmers in the lane.
  - Older swimmers are more independent and have more desire to carry out activities with less instruction. However, the range of capabilities can vary widely, such that better and faster swimmers become bored. Older swimmers also have larger bodies that take up more room in the lane.

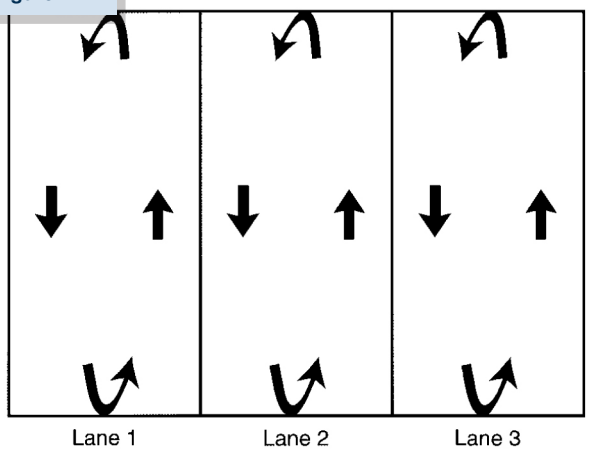
Think about how Coach Jones handled her dilemma. Not only is Coach Jones short her age-group coach, she also has to deal with a change in the number of lanes available. Instead of having five lanes for 25 senior swimmers and three lanes for 20 age-group swimmers, she now has to divide 45 swimmers among five lanes. Coach Jones adapted to her situation, but not in a way that was safe for her swimmers. She should have readjusted her workout plan based on the current situation. Younger swimmers are at risk in crowded lanes with older swimmers. Coach Jones could have reorganized the group, placing swimmers of comparable age and ability in the same lanes. She should have also adjusted her workout plan for the senior group, or at the very least devised a separate workout for the younger swimmers in their own lanes.

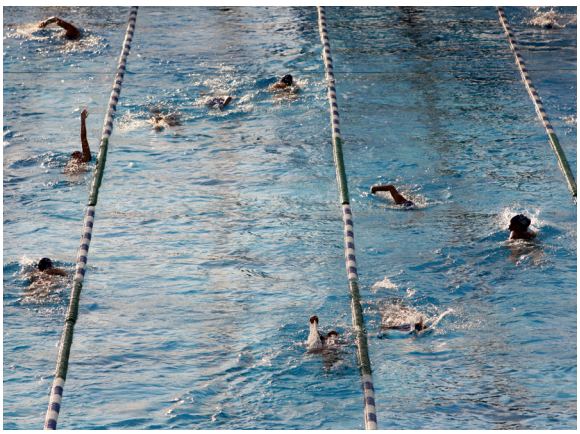
Circle Swimming Guidelines

When making adjustments to your workout plan, remember, you still need to ensure that the training is safe, especially when athletes swim in the lane with others. The need for safety takes on even greater importance if your adjustments require more swimmers than usual in a lane. The safest way is to

use circle swimming during practice (Figure 2-4). Typically, swimmers swim counterclockwise in all lanes, keeping to the right at all times. If the lanes are very narrow, then alternating clockwise with counterclockwise lanes can reduce the incidence of swimmers hitting the hands of other swimmers in adjacent lanes. Or you may have to adjust the start interval for certain lanes. In other words, be flexible in figuring out what works best for the situation and set up rules for safe passing.

Figure 2-4





When teaching and enforcing circle swimming, follow these guidelines:

- Have swimmers keep to the right when using the counterclockwise pattern. For narrow lanes, consider alternating clockwise with counterclockwise lanes.
- Establish a start interval between swimmers, typically 5 seconds, which allows each swimmer to clear the starting area before the next swimmer begins and also leaves enough open water in front of and behind the swimmers to swim without interference. An interval of less than 5 seconds can create insufficient space between swimmers and congestion at the ends of the pool, possibly leading to collisions, especially when swimmers are entering a turn or pushing off the wall after finishing a turn.
- Be prepared to adjust interval levels based on the number of swimmers in the lane and their ability.
- Do not allow swimmers to leave early.
- Be sure that the first swimmer does not come around to turn before the last swimmer departs the wall.
- Discourage swimmers from beginning a *repeat* (a training swim of a certain distance repeated a prescribed number of times with either a set rest interval or to be completed in a prescribed time which includes the swim and rest period) before their *send-off interval* (the prescribed time between swimmers' departure from the wall), since leaving early can lead to crowding and congestion in the lane.
- Establish rules for passing, waiting for send-offs and keeping walls open for turns. Emphasize passing only when it can be done safely.
- Clarify expectations with older or more experienced swimmers about safe circle swimming and lane etiquette.
- If at any time you observe unsafe conditions, stop the swimmers and reorganize lane assignments, send-off intervals or the entire activity.

You need to remember the age and experience of the swimmers when instructing them about circle swimming. Young or novice swimmers typically:

- Do not instinctively understand circle swimming and send-off intervals.
- Do not understand how to group themselves in the lane.
- May not realize that a faster person should go ahead of a slower person.
- May not even recognize that there are faster and slower swimmers.

As a coach, you are responsible for teaching them how to safely swim in a circle. Spend time at the very beginning of the season explaining and then practicing circle swimming and send-off intervals. Establish the rules and carefully monitor the swimmers. And be sure to review the procedures frequently.

HYPOXIC TRAINING AND HYPERVENTILATION

Coach Jordan's swimmers love contests. Their favorite is to see who can swim the farthest underwater. Recently Graham swam about 40 yards underwater before surfacing. Coach Jordan keeps teasing Graham about "quitting" 10 yards from the end and telling him that he can make the entire 50 yards. Graham and some other boys are ready to try it. Coach Jordan tells Graham to take "a lot" of deep breaths so that he can "build up the oxygen in his blood." Graham inhales deeply about 10 times. He feels a little dizzy and starts to swim underwater. He turns and starts back. Suddenly Coach Jordan notices something is wrong with Graham. What did Coach Jordan do that was dangerous?

It is the nature of athletes to continually want to push the boundaries of what they can do. As a coach, you are there in large part to support your swimmers' goals. But you are also responsible for knowing when a swimmer's efforts cross the line into dangerous territory. Hypoxic training and hyperventilation are cases in point.

Many swimmers falsely believe that *hyperventilation*, or rapid deep breathing, before prolonged underwater swimming increases the amount of oxygen in the body, allowing the swimmer to hold his breath longer. In fact, hyperventilation is a dangerous practice that may result in drowning. Rather than increasing the oxygen in the body, hyperventilation actually lowers the carbon dioxide level in the body. This is risky because the drive to breathe is controlled by the amount of carbon dioxide in the blood. When a person hyperventilates and then swims underwater, the oxygen level in the blood can drop to a point that is so low a swimmer passes out before the brain signals that it is time to breathe. Then, when the person finally does take a breath instinctively, water rushes in and the drowning process begins. Because of the danger, hyperventilation should never be taught or allowed at your facility. The **American Red Cross Scientific Advisory Council** has issued an advisory on hyperventilation preceding underwater swimming.



Hypoxic training is a bit different but still dangerous when done incorrectly or without regard for common sense. Rather than having swimmers hold their breath while swimming under water, hypoxic training focuses on practicing an extended breathing pattern while swimming on the surface. In truth, there is no evidence that an extended breathing pattern does anything to train the anaerobic system; however, it may improve oxygen management capacity. Coaches need

additional experience and training before considering the use of hypoxic training. Any time this training technique is used, it should be monitored carefully and swimmers should be instructed to breathe when necessary. In addition:

- Have swimmers take only one or at the most two deep breaths before beginning hypoxic training.
- For safety, use hypoxic training (breathing on a restricted schedule) only in a training program of experienced swimmers in good physical condition with proper supervision and instruction.
- Only conduct this activity on the surface of the water.
- Limit the number of repeats of hypoxic swimming.
- Allow adequate time for recovery, which will vary from swimmer to swimmer.



Check out **USA Swimming** for an article about research findings related to hypoxic training. Information on additional practice methods, procedures and games for swimming practice is available at professional clinics held yearly by USA Swimming and American Swimming Coaches Association (ASCA).

Were Coach Jordan's actions dangerous? Coach Jordan thought she was challenging Graham, but in fact she was encouraging a very dangerous activity. Having Graham hyperventilate before submerging led to a decrease of oxygen in his blood, causing him to lose consciousness while underwater and placing him at risk for drowning when he instinctively takes a breath.

TURNS

Coach Nelson has a group of novice swimmers. He thinks they should all be doing flip turns in practice. He remembers his own coach telling him to "just swim into the wall and do a somersault," so that is what he tells his swimmers. Chaos ensues. Some kids miss the wall entirely, while others hit the wall with different parts of their bodies. Coach Nelson keeps yelling, "Just do a somersault!" What should Coach Nelson have done differently?

Remember when you were on the swim team? During one practice, the coach announced it was time to learn how to do turns. It seemed simple enough, until you realized it was actually pretty hard to tell when you were too close to the wall—or too far, for that matter. Once you mastered the skill, however, you noticed an increase in efficiency of your swimming.

When it comes to teaching your team this same important lesson, the approach you take will be key in their success—and will surely take your swimmers to a new level too, in practice and in competition.

The fact is, the ends of the pool where turns are completed are common accident areas. Your swimmers will need to be instructed on how to safely execute turns for each of the four strokes and for the individual medley. This instruction includes both

a verbal explanation and a demonstration of the techniques (Figure 2-5). No matter how anxious you are to start incorporating turns into your everyday activities, introduction to and instruction in turn mechanics should not be rushed. Practice, practice, practice before expecting your swimmers to be able to successfully do turns as a part of the flow of their workout. For more information on how to teach turning techniques for all four competitive strokes, check out the Resources section of the course to view a video on turns.

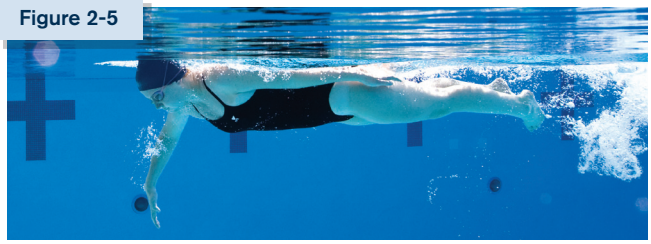
As the coach, you also need to make swimmers aware of the potential risks involved with turns. Training and supervision are necessary when learning and practicing turns. For example, when teaching swimmers how to do a front flip turn, instruct them to watch the bottom markings to help judge the distance from the wall. Keep in mind that injury is possible when swimmers:

- Misjudge the distance and get hurt by swimming into the wall.
- Hit the heels or ankles on the wall during a flip turn.
- Push off at the wrong angle, which is especially dangerous in shallow water.
- Push off the wall in the center of the lane, colliding with another swimmer.

Additional key points to remember are to space swimmers adequately, use markers such as bottom markings or backstroke flags to help swimmers judge the distance from the wall and instruct them on how to pass each other safely.

So what should Coach Nelson have done? Coach Nelson needed to do more than just tell his swimmers to do a somersault. He needed to stop the practice, get the swimmers grouped for instruction and then explain and demonstrate the technique. This explanation and instruction would be especially important because he was working with a group of novice swimmers. In addition, all of the swimmers should have been given ample time to practice the turns before they could be expected to execute them in a workout situation.

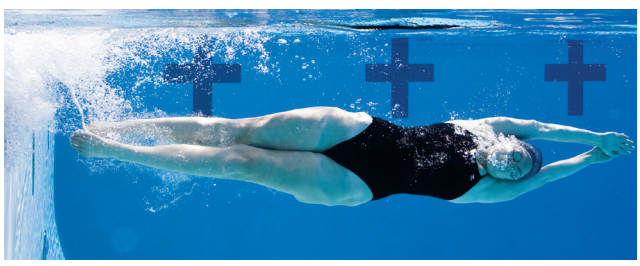
Figure 2-5













HEAD-FIRST ENTRIES AND RACING START SAFETY

Coach Irving has a group of novice swimmers who will be competing in their first meet. He decides that they all need to know how to do a racing start off the starting blocks. He lines them up behind the blocks and instructs them on the starting commands. He reminds them not to fool around on the blocks or to bail out once they have left the block. Then, one by one, he has them do a start off the blocks. Several swimmers are so nervous about diving off the blocks, they just jump feet-first into the water. The more daring ones try to dive; some make it, but most end up doing belly flops. Coach Irving is very frustrated and concerned that his swimmers just are not getting it. He is worried that they will not be able to perform a start off the blocks at the meet. What should Coach Irving have done differently to better prepare his swimmers?

In competition, strong racing start skills can be the key to a successful meet. But learning how to be fast off the blocks takes more than natural talent. It takes physical control, mental readiness, plenty of practice and your close supervision. As with any skill, **never** force a swimmer to do a racing start if he or she is not ready. To help ensure swimmers learn and practice starts safely, follow these guidelines:

- Be sure swimmers can demonstrate correct hand, arm and head position before performing a head-first entry.
- Review body position and stability on dry land. Practice tight streamlining with the arms overhead while standing or by lying on the back on the deck.
- Be sure swimmers can jump feet-first into deep water, swim to the surface, turn around, level off and swim 10 feet.
- Ensure that swimmers are able to demonstrate body alignment skills such as torpedoing, porpoising and streamlined push-offs, as well as deep-water skills including surface dives, bobbing and sculling.
- Always require swimmers to hold their arms fully extended overhead when they enter the water head first.
- Make sure swimmers are able to hold their arms over their heads and in line with the body on a forceful push and glide underwater.
- Do not let swimmers do head-first entries or racing starts over stationary objects, such as starting blocks or lane lines, or other devices such as poles, ropes or kickboards.
- Caution swimmers that the pool deck is slippery. If swimmers slip during drills, check their foot positions for correct push-off. Try putting a wet towel on the deck and hanging it over the pool edge to give better traction, especially on tile decks.
- Be sure starting blocks are secured tightly to the deck and meet the regulations of the applicable governing body as to size, height from the water and required pool depth for instruction. Check the rule book of the governing body for these regulations.

- Be sure swimmers are familiar with the water depth and equipment they are using, especially starting blocks. The design of starting blocks may vary from one aquatic facility to another, but proper training techniques and safe practice can help competitive swimmers adjust to differences.
- Be aware that coaches with additional training and experience might use advanced training techniques to improve racing starts of experienced swimmers. These advanced techniques, which may include practicing racing starts over a soft object, such as a foam noodle, should only be practiced by experienced swimmers in water at least 12-feet deep under the supervision of an experienced coach.

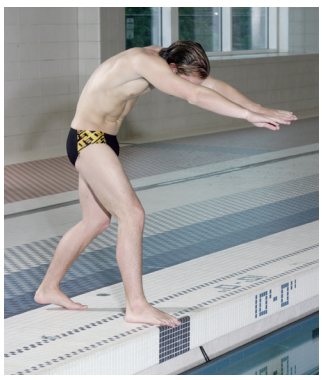
What does Coach Irving need to do? First, Coach Irving should not have the swimmers going off the starting block without his even knowing if they are able to safely enter the water head-first! Other than instructing them on starting commands and some basic safety considerations, he has not provided adequate instruction in safety nor followed a progression in teaching head-first entry skills. He needs to reconsider if his swimmers are ready for competition since he has not yet taught them critical skills for safely entering the water.

Figure 2-6











Head-First Entry Progressions

No matter how eager your swimmers are to learn this skill, racing starts should be taught as a step-by-step progression. Each of the steps—sitting position, kneeling position, compact position, stride position, and shallow-angle dive should be practiced until the swimmer can do each with confidence and control (Figure 2-6). Swimmers must be able to enter the water with control at each step before moving onto the next. Only when a swimmer knows how to properly enter the water can he or she control how shallow or deep their entry is. Swimmers who are unable to control the depth of their entries should not be directed to perform racing starts from the pool deck as a "safer" alternative to using starting blocks. Studies indicate that swimmers who are unable to control the depth of their entries from regulation starting blocks also cannot control their entries from the pool deck. They go just as deep in the water from the pool deck as from starting blocks. This means that swimmers who are unable to control their entries at any step in the learning progression are not ready for racing starts. Check out the Resources section of the course to watch a video on entries for swimming.

RESOURCES

Racing Starts from Starting Blocks

When it is time to introduce the starting blocks, remind your swimmers that the blocks should only be used by trained individuals during controlled practice, supervised warm-up or meet conditions. Racing start skills should also only be done in water depths that conform to the rules of the regulating body, such as **USA Swimming**, the **National Collegiate Athletic Association**, the **National Federation of State High School Associations**, **Federation Internationale de Natation** and the **YMCA of the USA**. As the coach, also be aware of higher standards established by local and state bathing codes which supersede regulations and recommendations established by competitive organizations.

RESOURCES

The fact is, almost all injuries happen because an athlete is poorly prepared or distracted. Help keep your swimmers safe by going over rules often and enforcing them strictly. Include the following important safety rules in your teaching:

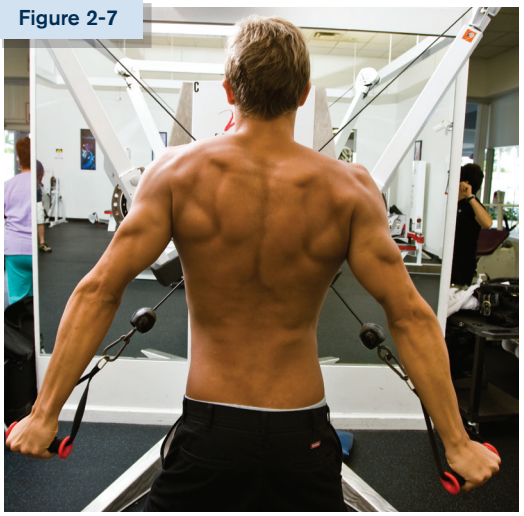
- Be aware of water depth before entering the water at both competition and practice pools. If a swimmer does not know how deep the water is, enter feet-first the first time. Point out depth markers. Be aware of and remind swimmers of USA Swimming's depth requirement for racing starts and also that most pools require "No Diving" signs for depths less than 5 feet. Be aware that state, local or facility rules may be stricter than USA Swimming's requirement and that other regulating bodies may have different requirements. Swimmers should also be aware of the location of slopes or other depth variations.
- Look before jumping or executing a head-first entry into the water and only enter with arms fully extended overhead.
- Always use a feet-first entry during warm-up and enter from the designated starting end.
- Only use starting blocks and head-first entries when given permission to do so by a marshal at a swim meet or by the coach at practice.
- Never start a water entry until the preceding swimmer has come to the surface and has moved away from the entry area. This is especially important in practice situations and in the sprint lanes during warm-up for swim meets.
- Enter the water straight ahead from the deck or starting block.
- Never perform a head-first entry into pool water that is cloudy or murky.
- Do not engage in horseplay or fool around on the starting blocks or at the edge of the pool.
- Always do a shallow-angle dive when performing a racing start either from the deck or a starting block.
- When practicing racing starts, never attempt to abort a poor racing start while it is in progress. Doing a somersault, pulling up quickly or rolling to one side is dangerous. The entry should be completed and the swimmer's technique then corrected by the coach.
- During a false start at a swim meet, never attempt to abort a poor racing start while it is in progress.
- When entering the pool for backstroke practice or a backstroke event during a meet, enter feet-first and stay close to the end of the pool.
- Do not attempt a somersault or flip entry into a competition pool.

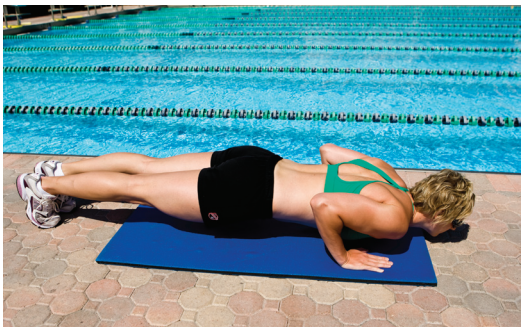
DRYLAND TRAINING

Coach Walker has decided to add dryland training to his workout plan for his swimmers. He finds some stretch cords and weights in a closet and decides they can be used on the pool deck prior to practice. He divides his athletes into three groups: one to work with the stretch cords, one with the weights and one group to go on a run. He gives a brief period of verbal instruction and then tells the athletes to get started. Did Coach Walker adequately address the safety of his swimmers?

When it comes to adding variety and flexibility to your swim team practices, sometimes you need look no farther than the pool deck itself! With its many options for building endurance, strength and fitness, dryland training is an ideal complement to your water-based activities. It is also an excellent alternative when your pool time is limited (Figure 2-7).

Figure 2-7





USA Swimming has valuable articles and videos related to dryland training. When adding dryland training to your workout plan, consider the following:

- Check that athletes are under the direct supervision of a qualified coach.
- Instruct athletes in the proper and safe use of equipment.
- Check equipment for safety before use by athletes.
- Ensure that activities are age- and ability-appropriate.
- Increase the intensity and duration gradually, about 10 percent each week.
- Encourage athletes to report any injuries.
- Clearly communicate the importance of adhering to the established rules.
- Monitor safety and stop any activity if it becomes unsafe or chaotic.

Be creative! After all, there is not any one best way to incorporate dryland training into your team practice—other than taking a safety-first approach, of course! Schedule dryland before or after water practice, on the pool deck or in a gym. And keep in mind that athletic facilities, such as pool decks, locker rooms and gyms, are prime locations to contract diseases such as methicillin-resistant *Staphylococcus aureus* (MRSA) infections. See *Preventing MRSA*.

Preventing MRSA

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a bacterium that most often causes a skin infection. It is spread through contact with a person's infected skin or their personal items. MRSA is often found in locations where people are in close contact with one another, such as athletic facilities, including pool decks, locker rooms and workout equipment. But exposure to MRSA does not mean that you will get the infection. You and your athletes can help prevent the spread of MRSA by doing the following:

- Practicing good personal hygiene by washing hands frequently with soap and water or using an alcohol-based hand rub.
- Showering immediately after exercising.
- Using a towel or some other barrier between you and the surface of the pool deck or between you and equipment shared by others, such as gym equipment.
- Showering before entering the pool.
- Not sharing personal items with others, such as razors, footwear, towels or swim caps.

Continued on next page

Preventing MRSA *continued*

- Wearing appropriate foot covering when on the pool deck, in locker rooms and showers.
- Keeping any wounds covered and contained.
- Excluding any athlete with a wound and active infection from participation in water activities until that wound and infection are healed.

For more information, see the Centers for Disease Control and Prevention website on **MRSA**.



Was Coach Walker being safe? Coach Walker overlooked basic safety practices in his workout plan. He did not inspect the equipment for safety and he gave little instruction on equipment use and safety. Nor did he provide any supervision when his swimmers were using the equipment. Worst of all, he sent a group of athletes on an unsupervised run. He had a good idea but did not properly plan and organize the activity.

EVENT SAFETY

Coach Toby's athletes arrive at a swim meet. Coach is not there and the swimmers do not know where to go. Finally one of the parents tells them, "Get in the water and start warming up." They go to lane 1 and dive in. One swimmer just misses another who is coming in to the wall. The marshal notices that the swimmers do not have a coach on deck and tells the swimmers, "Get out of the pool." What should Coach Toby have done to prevent this situation? Was the marshal correct in doing what he did?

Swim meets and other events pose extra safety challenges. At your facility, they mean increased crowds and added concern. And even when you are not swimming at your facility, this doesn't release you of the responsibility for the safety and control of your team. You should be vigilant. Here are ways to help maintain your team's safety during an event.

First, being present on deck in time for warm-up is essential. Sometimes there are situations that delay your arrival on deck. When you are traveling, sometimes there are unexpected delays. If you are not on the deck for warm-up, will your swimmers know what to do or where to meet? Make sure the answer is yes by developing a swim meet safety plan before your first event. You need to have a well-thought-out communication plan so you can alert swimmers, parents and other coaches if something comes up.

What was the problem with Coach Toby's situation? The marshal was right in getting the swimmers out of the pool, although he needs to be patient and compassionate with the swimmers. After he ascertains that the coach is not present, he should assign the swimmers to another coach who is willing to supervise them along with his or her own swimmers. Once Coach Toby arrives, he can take over. Coach Toby holds the overall responsibility for making sure the swimmers know what to expect and do at a meet. First, Coach Toby should have been present in time for warm-up or made arrangements for another qualified coach to monitor the swimmers. In addition, the

coach should have instructed the swimmers as to where to meet prior to warm-up and taught them to never enter the water without their coach present. (Without a coach present or responsible for the swimmers, the swimmers should report to the marshal for an assignment to another coach.) Everyone, swimmers, parents and coaches included, needs to be prepared for unforeseen circumstances that may arise. A clear pre-meet preparation and communication plan must be in place. Moreover, Coach Toby evidently did not instruct the swimmers about the safety rules of warm-up, such as feet-first entry and waiting for a clear space before entering the lane. The swimmers were also not aware that they needed to follow the instructions of the marshal. Coach Toby may have prepared his swimmers to swim fast, but he did not prepare them for the situations they would face during warm-up, thus creating an unsafe situation for the athletes.

Warm-Up

As a coach, you are responsible for knowing and enforcing standard swim meet warm-up and water entry procedures. These procedures should be the same as those used for practice and should address feet-first entries, use of starting blocks, circle swimming, coach supervision and safety marshal directions. Warm-up procedures should include the following:

- Performing feet-first entries into the water.
- Looking carefully for other swimmers before entering the water.
- Using starting blocks only under supervision.
- Following circle swimming guidelines.
- Warming up under the direct supervision of coaches.
- Following the directions of safety marshals assigned to the pool deck during swim meets.

In addition, USA Swimming has developed a list of suggested guidelines for swim meet warm-up for use by local swimming committees (LSCs) to promote safety among its members. See *USA Swimming Warm-Up Guidelines*.



USA Swimming Warm-Up Guidelines

I. General Warm-Up Period in Small Pools (4–6 lanes)
   A. In effect except for 60 minutes prior to the meet.
   B. There should be no racing starts off the blocks or off the edge of the pool at this time. Athletes should slide into the pool feet-first (3-point entry).
   C. Outside lanes—kicking only.
   D. Inside lanes—swimming and pulling only, no paddles.
   E. No sprinting or pace work.
   F. In large pools (8–10 lanes) pace work may be conducted in the outside lanes.

II. Specific Warm-Up Period
   A. Last 60 minutes of pre-meet warm-up period.

Continued on next page

USA Swimming Warm-Up Guidelines *continued*

B. Suggestions for 8-lane pool: each lane scheduled as follows:
   1. Push off one or two lengths and back, beginning at starting end of pool. Circle swimming only. No racing starts.
   2. Racing start only. Swim one length only. All swimmers begin at starting end of pool.
   3. General warm-up only (as above). No racing starts.
   4. General warm-up only (as above). No racing starts.
   5. General warm-up only (as above). No racing starts.
   6. General warm-up only (as above). No racing starts.
   7. Racing starts only. Swim one length only. All swimmers begin at starting end of pool.
   8. Push off one or two lengths and back, beginning at starting end of pool. Circle swimming only. No racing starts.

C. Suggestions for 6-lane pool: each lane scheduled as follows:
   1. Push off one or two lengths and back, beginning at starting end of pool. Circle swimming only. No racing starts or diving.
   2. Racing starts only. Swim one length only. All swimmers begin at starting end of pool.
   3. General warm-up only (as above). No racing starts.
   4. General warm-up only (as above). No racing starts.
   5. Racing start only. Swim one length only. All swimmers begin at starting end of pool.
   6. Push off one or two lengths and back, beginning at starting end of pool.

D. Circle swimming only. No racing starts. No racing starts are allowed in the outside lanes so that those who are supervising the warm-up do not have to move away from the pool to avoid getting wet.

E. Important points for specific warm-up period.
   1. No racing starts in lanes other than those designated for head-first entries. The blocks should be marked to remind swimmers they should not enter head-first.
   2. Start all swimmers in all lanes at starting end of pool.
   3. Coaches should stand at starting end of pool when verbally starting swimmers on sprint or pace work.
   4. Swimmers should be reminded by coaches that breaststrokers need more lead time than freestyle or butterfly swimmers.
   5. Backstrokers should be reminded of the danger of leaving simultaneously with someone on the block. No one should be allowed on the starting block until the backstroker has executed his or her start.

F. Additional considerations
   1. The announcer should announce lane changes and/or warm-up changes when warm-up moves from general to specific. The announcer should remind swimmers of the procedure.
   2. Coaches should maintain as much contact with their swimmers as possible—verbal and visual—throughout the warm-up period.
   3. Coaches are reminded that the responsibility for supervision of their swimmer(s) is the same at the meet as when on deck at practice.
   4. Marshals have authority through the meet referee over the warm-up. A swimmer and/or coach may be removed from the deck for interfering with this authority.

Swim Meets and Facility Safety

Whether a swim meet is being held at your facility, or someone else's, safety is still a primary concern. Take a walk around the event area and note any concerns and share them with facility and/or meet management. They must then focus on what needs to be done to correct the problems.

Think about the following:

- When hosting a swim meet at a facility, ask questions, such as:
  - "What problems could happen and where?"
  - "What areas are at risk for potential congestion or overcrowding?"
  - "How could we address these concerns about congestion and overcrowding?"
  - "How can we route traffic around this area?"
  - "What equipment or personnel is needed?"
- Consider these areas and note common problems at meets, such as overcrowding behind the starting blocks or warm-up lanes, unsafe conditions in a warm-down pool or potentially unsupervised rest or staging areas, or general congestion on the pool deck and spectator areas.
- After the initial inspection, work with facility management to:
  - Write a checklist that can be used before the meet begins.
  - Write an action plan to include proper marking, appropriate signs, adequate security and/or supervision.

OPEN-WATER SWIMMING SAFETY

Coach White has decided to try open-water swimming with his swimmers. He announces that the next day's practice will be at the nearby lake. When the swimmers arrive at the lake, Coach White points to a small island and tells the swimmers: "Swim out to the island. It's about 400 yards away. Swim around it and come back to the shore." One of the swimmers asks, "How deep is the water and how will I know where I'm going?" Coach White says, "Don't worry about how deep it is, just go out and swim. Swimming is swimming, no matter where you do it." Coach White tells the swimmers to take off and says he will be waiting on the shore with some snacks when they return. Do you think Coach White planned a safe activity?

Whether in the ocean, a lake or a river, open-water swimming offers a whole new set of challenges for coaches and athletes alike (Figure 2-8). *Overview of the Types of Open-Water Swimming* (on the next page) highlights examples of some types of open-water swimming. The exciting sense of freedom open-water swimming brings can be a true thrill and lead to an even greater sense of accomplishment for participants. The trade-off is that in the open water, things are far more difficult

Overview of the Types of Open-Water Swimming

Typically, when you think about open water, you think of the ocean and salt water. But open-water swimming can take place in fresh water as well as other locations, such as lakes, rivers or water channels. The waters may be calm and gently flowing, or there may be waves and varying current. And these aquatic environments can occur all over the world, with wide-ranging water temperatures. Coaches, athletes, event directors and safety personnel must all understand that conditions are always changing in open water and should always have plans for these changing conditions.

The distances for the swims can vary, but 5K and 10K swims are the most common. Swimmers may engage in open-water swimming for a change of pace, relaxation, fitness or competition. With competitive open-water swimming, the event can be a single event or be part of another event such as a triathlon.

Moreover, several different course types may be used. These include swimming:

- Parallel to a shore.
- To or around a fixed point or landmark such as a rock, island or pier.
- Around a closed course marked by buoys.
- Point to point.

to predict. Think about it: a shift in the winds. An athlete who panics when they are far from shore. An object floating into the course. These things can all suddenly change the nature of a swim. That is why as a coach you will need to control every aspect of open-water swimming you can, so you are better prepared if something unforeseen happens.

Figure 2-8



Open-Water Training

Before any open-water swimming activity, you will need to have a well-thought-out training plan. Safety considerations will be based in part on the age, experience and physical ability of your athletes. Athlete considerations include:

- Swimmer count and communication
  - You need a plan for determining how you will account for every swimmer entering the water.
  - Athletes need to know what the signals are if they need assistance.
  - Specific signals need to be developed to let athletes know that they should look up or stop.
- Distance
  - Athletes may be able to handle the distance going out but may struggle in coming back, placing you and your athletes in trouble.
  - Open-water swimming can be difficult because there are no turns and no lane ropes to use for support.

- Escort
  - Enough escort craft (with some type of verbal or non-verbal communication with land-based safety personnel) must be available for large groups. See *Safety Equipment During Open-Water Swims* (on the next page) for more information.
  - If you have to stop for one athlete, others may be left unattended. Should they need assistance, they would essentially be alone.
  - Any motor craft used for escort must be kept at a safe distance from swimmers.
  - No athlete should be allowed to swim from behind a motor craft.
- Fear
  - Some swimmers may have a real fear of open water.
  - Gradual encouragement may be necessary.

You will also need to make sure there is an appropriate athlete-to-supervisor ratio at all times. For information on how to get started in open-water swimming, check out **USA Swimming** for more information on this topic.



In building your plan, you will also need to account for environmental factors. These could be related to weather and water conditions, or even things like what to do if someone spies a fin in the water. Consider the following factors that can affect open-water swimming:

- Wind velocity, which can increase waves and/or stir up bottom soil, making things unclear
- Water and air temperature
- Dangerous marine life
- Water cleanliness
- Visibility
- Water depth, currents and waves
- Weather conditions
- Floating object dangers, rocks, piers and submerged objects

Other risks associated with open-water swimming involve things like hypothermia, heat-related emergencies, hydration and deep-water rescues. You need to be well prepared to handle any and all of these situations, depending on the setting of the swim. Of course, part of the plan should be to start by eliminating any risks you can.

Open-Water Meet Safety

All of the factors mentioned take on even greater importance if you or your local swimming committee (LSC) decides to host an open-water swim event. If you plan to do so, get familiar with the important steps that go into planning. The first of these is to file an application that outlines the necessary elements of the meet plan and satisfies the requirements of the governing body (if any). As with many aspects of the sport, there are various governing bodies you might need to answer to for open-water swimming event safety. For example, USA Swimming has established

guidelines for hosting an open-water meet. USA Swimming recommends the following:

- Define the course with a clearly marked start area, turn markers and finish line.
- Design the course to minimize confusion and avoid head-on traffic patterns.
- Eliminate changes in course direction when the course is likely to be congested, such as the start.
- Seek advice from local experts, such as the beach patrol or parks department, the USA Swimming Local Swimming Committee (LSC), the Coast Guard and harbormaster.
- Have a clear emergency action plan and medical evacuation plan.
- Set up safety monitor stations with first aid supplies and emergency signaling devices.
- Be prepared to cancel the event in case of inclement weather.
- Account for every participant who enters and exits the water.
- Have a public briefing to go over the rules and procedures with all participants.
- Line up escort and pilot boats.



In addition, other governing bodies such as the **United States Lifesaving Association** and **Federation International de Natation** have published guidelines for open-water swimming event safety. Also, refer to *Safety Equipment during Open-Water Swims* for information related to essential safety equipment needed for this type of swimming.



Safety Equipment During Open-Water Swims

During open-water swim events, various national governing bodies usually require that a safety plan must be established that includes the following:

- Appropriate staffing levels of lifeguards who are experienced in open bodies of water and placed strategically to ensure continuous observation of all competitors and allow immediate response to the need for assistance.
  - Each lifeguard should be equipped with an observation platform such as a tower, rescue board or shared use of a rescue boat.
  - Each lifeguard should be equipped with a rescue flotation device such as a rescue tube or rescue buoy.
- Appropriate number of first responders to react to a need for assistance along with sufficient safety craft on the course. Lifeguards should be able to recognize and respond to a drowning victim within 30 seconds.

Continued on next page

Safety Equipment During Open-Water Swims *continued*

- Safety communication plan for efficient water-to-water, water-to-land and land-to-water communication such as public address system, two-way radios, hand signals, whistles or air horns.
  - There should be personnel on all boats, safety crafts and feeding platforms who have the ability to communicate with a safety officer.
  - There should be a safety officer who has the ability to communicate with all first responders, safety personnel and officials.
- Appropriate level of medical services, including a physician on site, one emergency medical technician (EMT) for every 150 participants, one ambulance on site or within a 5-minute response time for 250 participants, cooling or heating tent on site, protocol for air evacuation, and medical equipment.

Watercraft

Watercraft is essential equipment for open-water swims. Swimmers must never be left unsupervised or unescorted while in the water. Make sure that there are enough watercraft to escort the swimmers. Know your watercraft and make sure you can handle emergency situations. When using motorized watercraft, keep your distance, let no one swim behind the craft and always know where your swimmers are during the swim.

When using watercraft for a rescue, follow these three basic guidelines:

1. Extend an oar to the swimmer and pull him or her to the stern (rear) of the craft. This is the most stable area on which to hold.



2. If the swimmer cannot hold the oar or equipment, move the stern close to him or her. Pull the swimmer to the stern by the wrist or hand.



Continued on next page

Safety Equipment During Open-Water Swims *continued*

3. Have the swimmer hang onto the stern while moving the watercraft to safety. If the swimmer needs to be brought onto the craft because the water is very cold or the swimmer is fatigued, help him or her over the stern.



When using a motorized watercraft, follow these steps:

1. Always approach the swimmer from downwind and downstream.
2. Shut off the engine about three boat-lengths from the swimmer and coast or paddle to him or her.
3. Bring the swimmer on board before restarting the engine.

Keep in mind that regardless of the type of event, a key part of your responsibility will be keeping participants informed and prepared themselves. You will use pre-race announcements to communicate everything from how to register, what the plan is for varying weather and surf conditions, and what to do in an emergency or if marine life is encountered. A pre-race briefing should also include instructions to the swimmers for how to look out for one another, how to identify and locate lifeguards and medical personnel and the importance of staying hydrated. Finally, you will need to make sure everyone knows who the event officials, meet marshals and volunteers are, where spectators will be and what methods of communication will be used. For additional information, check out the USA Swimming site for information about **open-water meet safety**.

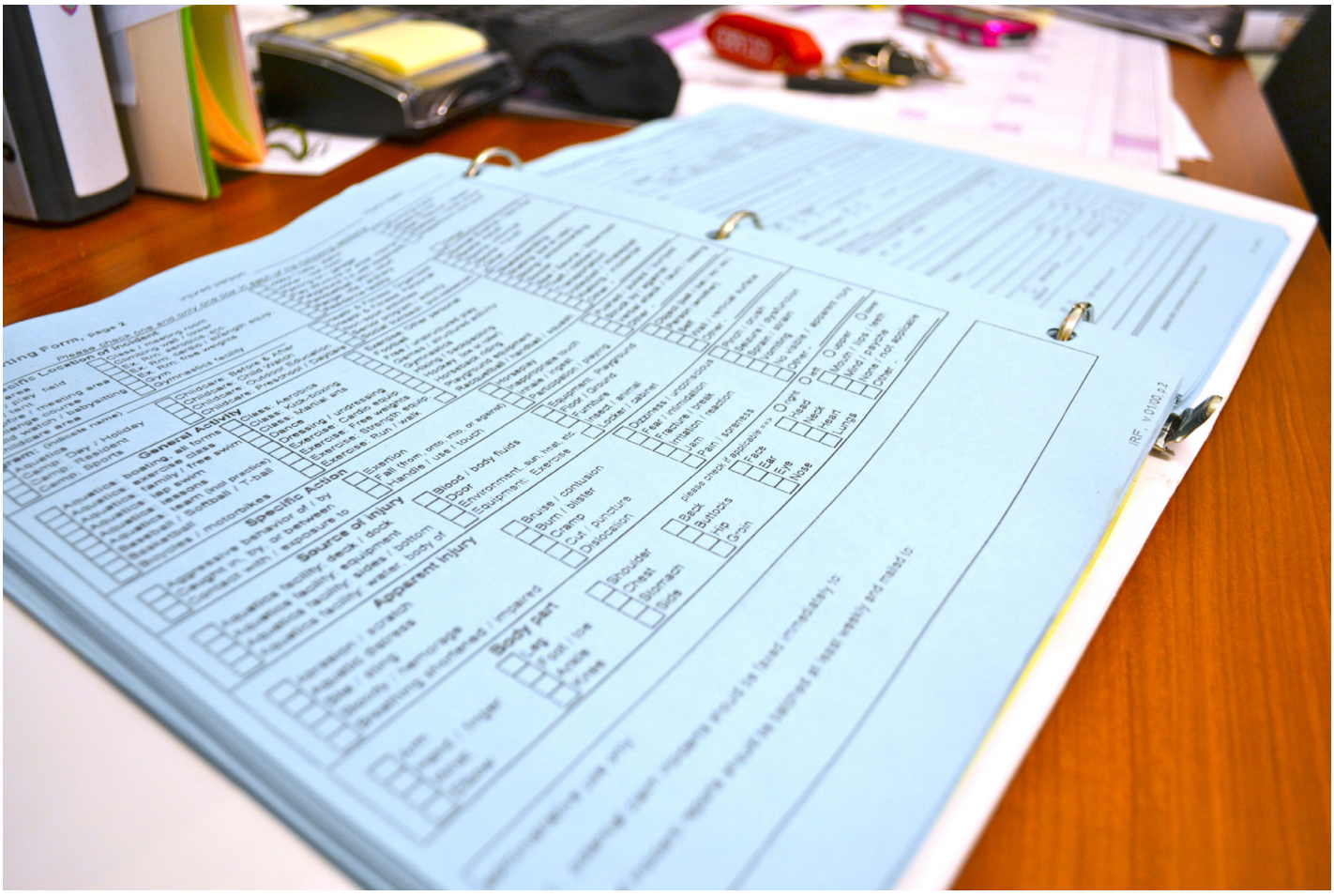
RESOURCES

Was Coach White safe in planning his open-water practice session? Although Coach White had a great idea, he failed to plan appropriately to ensure that his swimmers were safe. He did not know the distance or water conditions and had no plans for supervising the athletes. He also made the assumption that open-water swimming was the same as swimming in the controlled environment of a pool. Moreover, he rebuffed one of his athletes who had questions about safety concerns.

CONTENTS PAGE

CHAPTER 3

EMERGENCY PLANNING AND RESPONSE



Coaches should be aware of the need to help maintain a safe and comfortable environment for their swimmers. As a swim coach, monitoring and maintaining the facility may or may not be your responsibility. This depends on your relationship with the facility and legal certifications. Coaches must be aware of water and air quality issues as well as be familiar with electrical safety and weather and environmental hazards. Coaches also need knowledge of the facility rules and regulations. Coaches play a major role in minimizing risks. In spite of adequate training, planning, instructing and supervising, emergencies still can and do occur. The coach is often the first one on the scene in an emergency. An *emergency action plan*, or EAP (written plan detailing how coaches and facility staff are to respond to a specific type of emergency) and appropriate emergency responses are crucial.

WATER AND AIR QUALITY

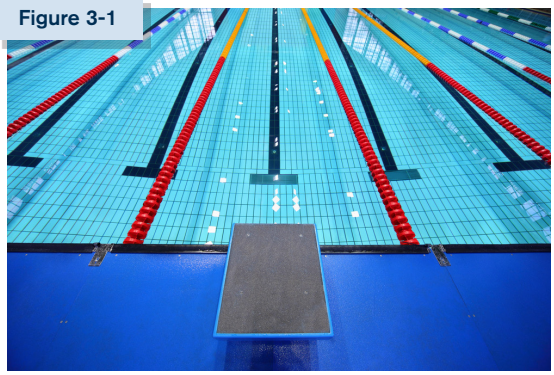
When Coach Jackson arrives at the pool, he notices a strong odor of chlorine in the air. The pool water looks clear and the staff says the water "tests fine." He opens the doors and windows to get some fresh air into the pool area. Soon after beginning practice, the swimmers are complaining of eye irritation and dry mouth and some are beginning to cough. Coach Jackson refuses to modify his plans or cancel the workout. He complains to the lifeguard on duty, who says, "I don't know anything about the chemicals." He hopes the conditions will be better tomorrow because it is a test set day. What should Coach Jackson have done?

The pool where your team practices may not be exactly resort-like, but it still should be inviting enough for anyone to want to jump in. After all, good water and air quality are not just "nice to have." They are an essential part of providing a safe environment for your swimmers. Even if there is another person responsible for facility maintenance, part of your job as the coach is to always be aware of conditions in and around the pool. If something is not right, you will need to take action—right away.

So what should you look for? One obvious sign of a problem is water that looks cloudy. You should be able to easily see the pool bottom, racing lanes and main drain covers (Figure 3-1). If the water is not clear, or looks discolored in any way, there is a water quality problem. Other indicators that the water clarity or quality is bad include:

- The water is an unusual color.
- The water or air has an unusual odor (usually categorized as a strong chlorine smell).

Figure 3-1



- Swimmers complain of eye irritation.
- Swimmers are severely coughing and/or having difficulty breathing.

A clear sign of trouble is a chlorine smell to the air, which actually comes from the formation of chloramines in the pool. Chloramines are created when free chlorine combines with ammonia and other nitrogen compounds. This process can be accelerated by perspiration, urine, saliva, body oils, lotions, some shampoos and soaps, and many industrial or household cleaners. The odor that results, which may intensify when swimmers agitate the water, is telling you that the water chemistry is unbalanced. Besides being unpleasant, the odor can be extremely irritating. It is worse at water level, but it can affect those at deck level or in the viewing area, too.

Sometimes water affected by chloramines may be hazy or cloudy, but not always. Often, the water will appear perfectly clear and the water test for free chlorine and pH will be normal. Problems with chloramines mostly occur in indoor pools. Fresh air and ultraviolet rays from the sun help prevent issues related to chloramines from occurring in outdoor pool environments.

Of course, not all signs of poor water and air quality are as easy to spot. In addition to what you see or smell, you should also listen to what your swimmers are saying! If they complain about eye irritation or have severe coughing, stop practice and find out what could be causing the problem. People with asthma are particularly susceptible and often react first to air quality issues.

So, what should Coach Jackson have done? Obviously, Coach Jackson sensed that something was wrong. He should have stopped the workout and followed the chain of command at the facility, such as contacting the pool operator or manager to report the problem and address the issue. Complaining to the lifeguard was inadequate. Facility management should provide a safe swimming environment for your swimmers, which includes the clarity and quality of the pool water.

Remember, it is not just gross or uncomfortable to ignore water or air quality issues. It can be harmful. Instead, of telling your team to "grin and bear it," tell the facility manager so the problem can be corrected. Or, if maintaining the facility is part of *your* job, make sure you have been properly trained in pool chemistry and operation by taking a pool operator program. The **Aquatic Exercise Association** and the **Centers for Disease Control and Prevention** have issued statements related to water and air quality in facilities. The American Red Cross Scientific Advisory Council has issued a scientific advisory statement on **water temperature for aquatic instruction**. USA Swimming also has issued statements related to **water and air quality** and **water and air temperature in facilities**.



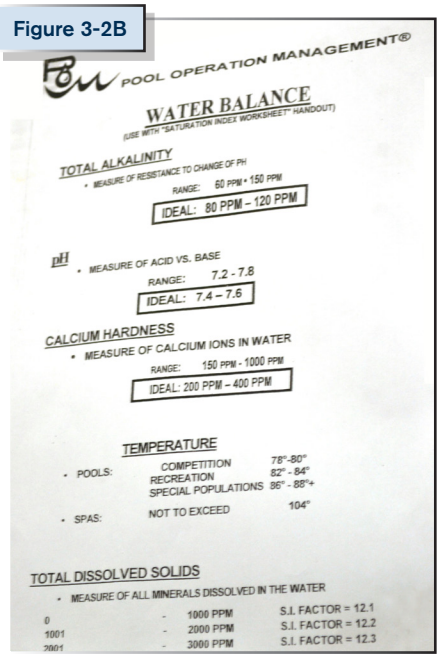
POOL CHEMICALS

While pool chemicals are essential to maintaining water and air quality, they are also dangerous. Always use common sense precautions. All cleaning liquids and pool chemicals in concentrated form are hazardous and poisonous. Accidental exposure can be fatal. Keep the chemicals in a separate area away from swimmers and spectators (Figure 3-2). If you are interested in learning more about pool chemistry and operations, enroll in a pool operator course offered by state or local governments and national organizations.

Figure 3-2A



Figure 3-2B


POOL OPERATION MANAGEMENT®

WATER BALANCE

TOTAL ALKALINITY
- MEASURE OF RESISTANCE TO CHANGE OF PH
RANGE: 60 PPM - 150 PPM
IDEAL: 80 PPM – 120 PPM

pH
- MEASURE OF ACID VS. BASE
RANGE: 7.2 - 7.8
IDEAL: 7.4 – 7.6

CALCIUM HARDNESS
- MEASURE OF CALCIUM IONS IN WATER
RANGE: 150 PPM - 1000 PPM
IDEAL: 200 PPM – 400 PPM

TEMPERATURE
- POOLS: COMPETITION 78°-80°; RECREATION 82° - 84°; SPECIAL POPULATIONS 86° - 88°+
- SPAS: NOT TO EXCEED 104°

TOTAL DISSOLVED SOLIDS
- MEASURE OF ALL MINERALS DISSOLVED IN THE WATER
0 - 1000 PPM S.I. FACTOR = 12.1
1001 - 2000 PPM S.I. FACTOR = 12.2
2001 - 3000 PPM S.I. FACTOR = 12.3

ELECTRICAL SAFETY

Coach Anderson coaches in an old facility. There is only one electrical outlet in the pool area to plug in the pace clocks. In the past her swimmers have complained about not being able to see the clocks. To fix this, she strings extension cords on the deck along the length of the pool to get the clocks into a better position. She has been doing this for years and has never had any issues. How else might Coach Anderson solve this problem?

You do not need to be told that water and electricity do not mix. Yet given the variety of electrically powered equipment commonly used in and around pools—things like pool vacuums and pace clocks—electrical shock is a very real hazard of your job. Do not let yourself become a victim! See *Emergency Procedures for Electrical Emergencies*.

Emergency Procedures for Electrical Emergencies

In the case of electrical shock or electrocution, call 9-1-1 or the local emergency number and follow the facility's EAP. Shut off the power source, check the scene and check the victim. Be prepared to perform cardiopulmonary resuscitation (CPR) or use an automated external defibrillator (AED).

Handling electrical equipment around a pool requires good sense and caution, no matter how familiar you are with the equipment. Be sure to use caution with any permanent or temporary connections and wires used with the following devices:

- Underwater lights
- Tape, CD or DVD players
- Automatic-timing devices
- Pace clocks
- Electronic loudspeakers
- Start systems
- Pool vacuum cleaners (*Note:* Swimmers should not be in the pool when pool vacuums are in use.)

When you must use devices that involve wires that stretch across the pool deck, follow all defined safety practices and remember: the devices should be connected to the power supply ONLY from a ground fault circuit interrupter, or GFCI (Figure 3-3). In fact, GFCIs are required in a pool area. If in doubt, do not plug something in! Use battery-operated devices on the pool deck or near the water, whenever possible.

Figure 3-3



What else could Coach Anderson have done? Coach Anderson could have minimized the risk by stringing the wires overhead. Or she could have taped the wires securely in place and then covered them with a mat. This not only reduces the risk of electrical shock but also helps to reduce the risk of tripping and falling over the wires. An even better solution would be to purchase battery-operated clocks. All clocks should be placed in locations that minimize tripping hazards.

WEATHER AND ENVIRONMENTAL CONDITIONS

Upon arriving at the outdoor pool for practice, the swimmers tell Coach Martinez that they heard forecasts on the radio of severe thunderstorms. Coach laughs and says, "That won't get you out of practice." During practice, he hears thunder and sees a flash of lightning. Although he does not think it is very close, he pulls his swimmers out of the water. Awhile later, Coach Martinez decides that the storm has passed and tells the swimmers, "Let's get back to it." As they step onto the pool deck, he hears another roll of thunder. What should Coach Martinez do?

It is a beautiful summer day when suddenly thunder rumbles in the distance. There are no clouds overhead, and your swimmers in the pool barely notice. But you heard it, and now what happens?

It is a frustrating fact of life, but a practice that starts under sunny skies can quickly become dangerous if warning signs of an impending storm are ignored. To help keep your swimmers safe, there are some essential weather safety steps every coach should take.

First, be informed. Find out what the weather forecast is before every swim session and plan accordingly. If you know a storm or other bad weather is predicted, stay alert for signs that it is near, such as thunder and lightning or high winds. Local radio stations, TV channels and cable services provide daily, reliable forecasts as well as emergency weather warnings. Any one of these sources can help keep you well prepared. In addition, online sources are increasingly becoming a preferred way to get weather information. If you choose to go online, search a reputable site, such as the one for the **National Weather Service**.

RESOURCES

The **National Oceanic and Atmospheric Administration (NOAA) Weather Radio All Hazards** is a nationwide radio network that provides detailed weather information 24 hours a day to most areas. A special radio receiver is needed to receive the signal and can be set to sound an alarm when a warning is issued for a specific area. These radios have battery back-up in case of power failure.

RESOURCES

The American Red Cross has **mobile apps** for different types of weather emergencies that are available for download. These apps provide alerts about specific weather conditions as well as valuable information about how to prepare for the emergency and what to do after it occurs.

Second, be prepared. Know how to respond to specific weather conditions when they happen. This starts with always following a facility's emergency action plan, or EAP, which usually involves, at a minimum, clearing swimmers from the water and finding appropriate shelter. EAPs will be discussed later in this chapter.

And if you are hosting a swim meet and unusual or severe weather conditions arise that make it impossible to conduct or conclude a meet safely, see the appropriate rule book for information on suspension of the meet, delays and rescheduling.

Lightning and Thunderstorms

Lightning and thunderstorms occur most often during the summer season (Figure 3-4). Whether a pool is indoors or out, at the first sign of lightning or a thunderstorm, follow the facility's procedures for clearing swimmers from the water and move them indoors, if needed. The general rule of thumb, or 30/30 rule, is to take cover when the time between a flash of lightning and thunder is 30 seconds or less and to remain under cover until 30 minutes after the last flash of lightning was seen or the last thunder was heard. The **National Lightning Safety Institute** recommends waiting 30 minutes after the sound of thunder is last heard before resuming activities.

Figure 3-4



In addition, the American Red Cross Scientific Advisory Council has issued a scientific advisory statement about **lightning safety** for outdoor and indoor pools that reflects the National Lightning Safety Institute recommendations.

RESOURCES

Follow these guidelines to help ensure safety with lightning and thunder:

- Clear everyone from the water at the first sound of thunder or first sight of lightning. Move everyone to a safe, sheltered area. For outdoor facilities, move everyone inside. Large buildings are safer than smaller or open structures, such as picnic shelters or gazebos.
- Keep swimmers out of showers and locker rooms during a thunderstorm. Water and metal can conduct electricity.
- Refrain from using a telephone connected to a landline except in an emergency.
- Keep everyone away from windows and metal objects (e.g., doorframes, lockers).
- Keep watching for more storms and monitor weather reports on a broadcast radio or weather radio.

If caught outside in a thunderstorm and there is not enough time to reach a safe building, take the following steps:

- Keep everyone away from structures in open areas, such as picnic shelters.
- Keep everyone away from tall trees standing alone and from any tall structures.
- Keep everyone away from water and metal objects, such as metal fences, tanks, rails and pipes.
- Tell everyone to stay as low to the ground as possible and to squat or crouch with the knees drawn up, both feet together and hands off the ground.
- Tell everyone to minimize ground contact; no one should lie flat on the ground.

So, what about Coach Martinez? Coach Martinez was correct in removing his swimmers from the water initially. However, he should apply the 30/30 rule for determining when it is safe to allow the swimmers back into the water. (The 30/30 rule is to take cover when the time between a flash of lightning and thunder is 30 seconds or less, and remain under cover until 30 minutes after the last flash of lightning was seen or the last thunder was heard.) Upon arriving back on deck and hearing the thunder, Coach Martinez should again remove the swimmers from the deck and seek a secure safe structure. Practice might need to be cancelled depending on how long the thunder and/or lightning are present.

Tornadoes

If you live in a tornado-prone area, you should monitor forecasts and be familiar with terminology. A *tornado watch* means that tornadoes are possible, so stay alert. A *tornado warning* means that a tornado has been sighted and that everyone should take shelter immediately. In the event of a tornado:

- Clear the water and surrounding area.
- Move everyone to the location specified in the facility's EAP, such as a basement or an inside area on the lowest level of a building.
- Keep everyone away from windows, doors and outside walls.
- If adequate shelter is unavailable at or near the facility, have everyone lie flat in a ditch or in a low section of ground.
- If a tornado siren warning is heard, keep swimmers in the safe location until the all-clear signal is sounded.

Heavy Rain, Hail and High Winds

Figure 3-5



Even without lightning or tornado conditions, heavy rain, hail and high winds can be unsafe too (Figure 3-5). Rain can make it hard to see the bottom of the pool or beneath the surface of the water and hail can cause serious physical injury. With either of these weather conditions at an outdoor facility, swimmers should be cleared from the water and directed to shelter. High winds can cause turbulence in the water, which can make it hard to see swimmers. Plus, wind increases the risk of hypothermia, especially for small children and the elderly. If high winds become a problem:

- Clear the pool or waterfront if visibility is impaired by waves or increased turbidity.
- Move everyone indoors.
- Secure all facility equipment that could be blown and become dangerous, but only if it is possible to do so safely.

Fog

If fog rolls in and lowers visibility—something that can happen at any time of the day or night with changing weather conditions—you need to clear the pool immediately if at any point during the practice the swimmers are not visible. The facility may also need to be closed.

Weather Conditions and Indoor Facilities

Indoor facilities may be affected by weather conditions. In addition, severe weather can cause a power failure. If this happens, you should clear the pool and deck immediately. You should also be prepared by having portable or emergency lighting available, and again, by knowing the facility's emergency action plan.

OTHER FACILITY SAFETY ISSUES AND RECOMMENDATIONS

Coach Cane has an energetic group of young swimmers. He wants to improve their starts. So, he decides to do running starts in which the swimmers stand by the wall, run across the pool deck and dive into the water. He remembers that this was his favorite drill when he was a kid and notes immediate improvement in the swimmers' starts. However, the pool manager tells Coach Cane that he needs to stop this activity because it is unsafe and violates the pool rules. Coach Cane argues that the rules do not apply to his swim practice and that it is a supervised activity, not "horseplay." The manager insists that Coach Cane stop the running starts or get kicked out of the facility. Who is right—Coach Cane or the pool manager?

Figure 3-6





The more time your team spends practicing, the more at ease they will feel around the water and at the facility. But while the pool may become a "home away from home," it is important to remind your team that the rules for visitors still apply to them!

Start by making sure common rules such as walking on deck, diving only in designated areas and refraining from horseplay, are clearly posted—and faithfully followed by your team members (Figure 3-6). Do not just rely on passive reminders. Talk to your team about the importance of behaving safely around the pool and following the pool rules. Remind them that the risks are just as great for them as they are for any other pool patron. You cannot emphasize enough that even experienced swimmers are at risk for injury and death and should never enter a pool that is closed, never swim unsupervised and never use the starting blocks unless the swimmer is supervised by a coach. Lastly, remember: as a coach, you need to follow the rules, too. You are a role model and it is your responsibility to set the example.

Think about Coach Cane and the pool manager. Who was correct? In the scenario, Coach Cane acted unsafely. Although he was supervising the activity, he allowed his swimmers to engage in behavior that could lead to slipping or tripping and, possibly, injury. Moreover, Coach Cane violated the facility rules. In every case, all persons using a facility are bound by the rules for that facility. Facility rules ***always*** supersede the coach's rules.

MINIMIZING RISK

Coach Morrison's team rents time at the local recreation center, spending 4 hours a day practicing. Usually, one lifeguard is on duty during practice. Coach Morrison has been asked to attend a meeting with the facility management to discuss emergency action plans and risk management for the pool. He declines the invitation. Coach feels that this is not part of his responsibility, saying, "I don't need to waste my time with a lot of insurance mumbo jumbo." He thinks it is just a bureaucratic formality that does not really affect his swim team. Is he right?

You have taught your team to always follow the rules and put safety first. But even with the best training, accidental injuries still can and do happen. All coaches should participate in risk management planning. Doing so projects an attitude of professionalism, a concern for safety and a willingness to do what is necessary to help provide a safe environment.

A good plan should cover prevention procedures, such as the rules and regulations of the facility and the governing body. It should cover the necessary training of coaches (including appropriate, current certification); systematic, routine safety inspections (such as using a facility safety checklist to identify potential hazards); and protocols for supervision. The plan should also cover the need to maintain ongoing communication and emergency action, such as knowing one's role when an emergency occurs. A detailed plan should be put in writing and thoroughly reviewed and practiced. The plan includes areas such as:

- **Safety Rules and Regulations.** Rules and regulations are designed to minimize the risk of injury. All rules and regulations (including the facility's, USA Swimming's and/or any other governing body's rules and regulations) and the procedures used to enforce them should be reviewed. Appropriate rules and procedures, such as warm-up procedures, should be posted or published. The facility's signage, including directional and warning signs, should also be reviewed to see if it is adequate and meets current state and local regulations.
- **Supervision.** Using only the most knowledgeable leaders and volunteers together with the best standard of care possible provides the highest level of supervision. Coaches and swim meet marshals should be active in enforcing the rules and regulations. An appointed club safety coordinator or another coach should act as a liaison between the club and facility manager in developing risk management plans. Continual communication between individuals instills a quality program.
- **Training.** All coaches, including the head coach and assistant coaches, must have the necessary safety certifications including CPR/AED and Safety Training for Swim Coaches. These certifications must be current. In addition, coaches should be knowledgeable about their role in emergency action plans. Facility guidelines for required supervision of aquatic activities by certified personnel must always be followed. Some facilities require certified lifeguards on duty.
- **Safety Inspections.** A key way to actively prevent injuries is to recognize potential hazards. This requires a systematic and routine method of inspecting the swimming facility. This can be done through the development of a series of checklists and by establishing a method of documenting and reporting faulty

equipment or facility dangers. Any faulty equipment should be removed and dangerous areas should be roped off.

EAPs and risk management—are they a bureaucratic formality? No, Coach Morrison has a responsibility to participate in the facility's risk management to protect himself as well as his swim team. He needs to make sure that he and his team understand their responsibilities while at the facility, even though they are only renting time there. Accidents and emergencies can happen anytime and Coach Morrison needs to be prepared. In addition, Coach Morrison's participation would help identify what his role would be should an EAP be activated while he and the team are at the facility.

EMERGENCY PLANNING

Life is unpredictable. And life at the pool is no different. Aside from the obvious risks inherent in aquatic activities, you never know when someone might break a bone or have a life-threatening respiratory emergency, or when a severe storm could roll through and create havoc.

As a coach and a leader, you will play an important role in an emergency at any facility where your team practices or competes, along with the lifeguards, facility management and other designated people. In fact, coaches are often the first on the scene of an accident involving members of their team. Knowing how to respond in the event of an emergency and how to activate the EAP is an essential part of your responsibility. Delays in response increase the chance that the situation will get worse; they can even mean the difference between life and death. In the event of any accident, however minor, USA Swimming requires that a **Report of Occurrence** be filed.



Emergency Classifications

Emergencies are typically classified as one of two general types: life-threatening or non-life-threatening. Regardless of the type of emergency, you must act quickly to prevent further injury.

Life-Threatening Emergencies

One lifeguard is on deck along with Coach Foley. A second lifeguard is on his break in the office. As Coach Foley busily prepares for his training group, a young swimmer comes running out on deck in a panic. He tells the coach, "Jaime has had an accident in the locker room. He's lying on the floor and isn't moving." What should Coach Foley do?

Life-threatening emergencies include situations such as a respiratory or cardiac emergency, severe bleeding or chemical poisoning. Examples are a drowning victim, a person who has a severe cut on the foot or hand or a person who has been exposed to chlorine gas. Each of these situations calls for immediate and positive action to prevent loss of life or some level of permanent injury to the victim.

Think about the situation with Coach Foley. Based on what the other swimmer says, it is difficult to determine if the situation is life-threatening. However, the swimmer

in the locker room is lying on the floor motionless, possibly unconscious. Therefore, Coach Foley needs to activate the facility's EAP and then proceed immediately to help the swimmer. At the same time, the other lifeguards should intervene according to the facility's EAP.

Non-Life-Threatening Emergencies

Coach Vaughn has 25 age-group swimmers training in four lanes. As Erin is attempting to pass Anna, she collides with an oncoming swimmer and hits her head on the other swimmer's shoulder. Both swimmers stop, seem to be okay and resume swimming. What should Coach Vaughn do in this situation?

Non-life-threatening emergencies may require the action of one or more people, but the danger to the individual is considered minimal. There are two levels of non-life-threatening emergencies:

- Major, which may include conditions or situations such as a head, neck or spinal injury, broken bones, an out-of-water seizure or a swimmer in distress.
- Minor, which may include conditions such as sunburn or minor bleeding from a cut or an abrasion.

A non-life-threatening emergency may become life-threatening if it is not handled properly or cared for immediately.

What should Coach Vaughn do? First, the situation does not appear to be life-threatening but it does require that Coach Vaughn act swiftly and appropriately. In this situation, she should have both swimmers get out of the pool. In addition, she needs to have her assistants take over supervision of the other swimmers who are remaining in the pool. If there are no assistants available, then she needs to clear the pool while she tends to the injured swimmers. The swimmer, Erin, may have a head injury from hitting her head on the other swimmer's shoulder. The other swimmer, Anna, may have a shoulder injury from the collision.

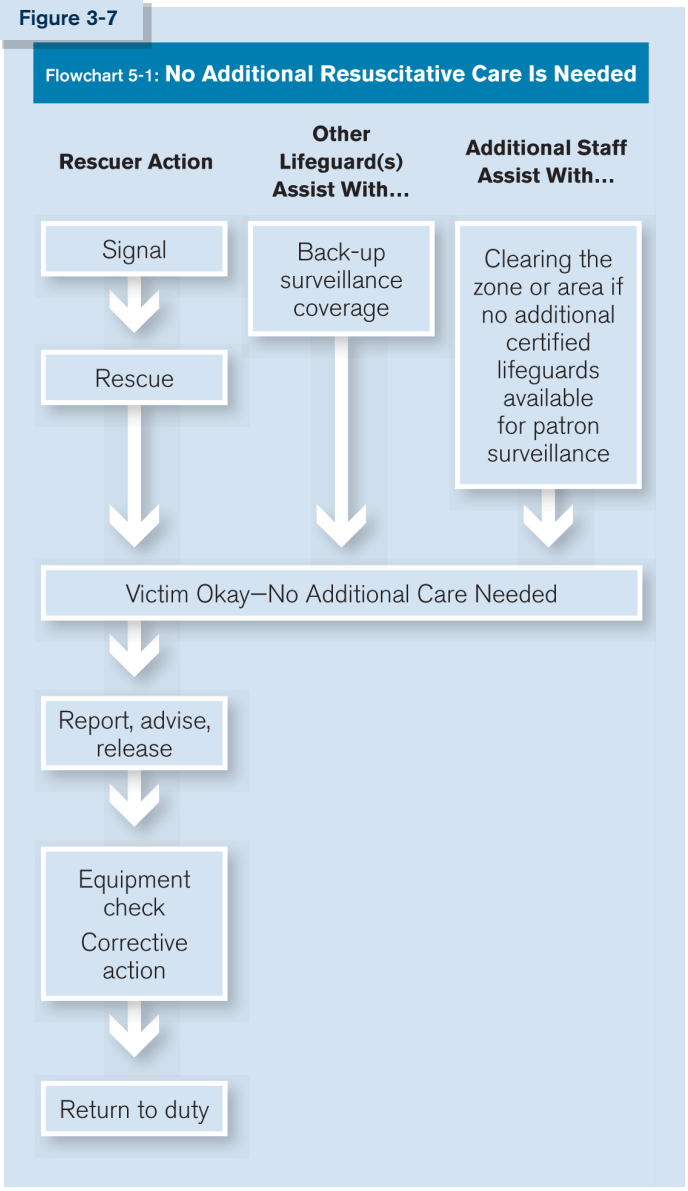
Emergency Action Plan

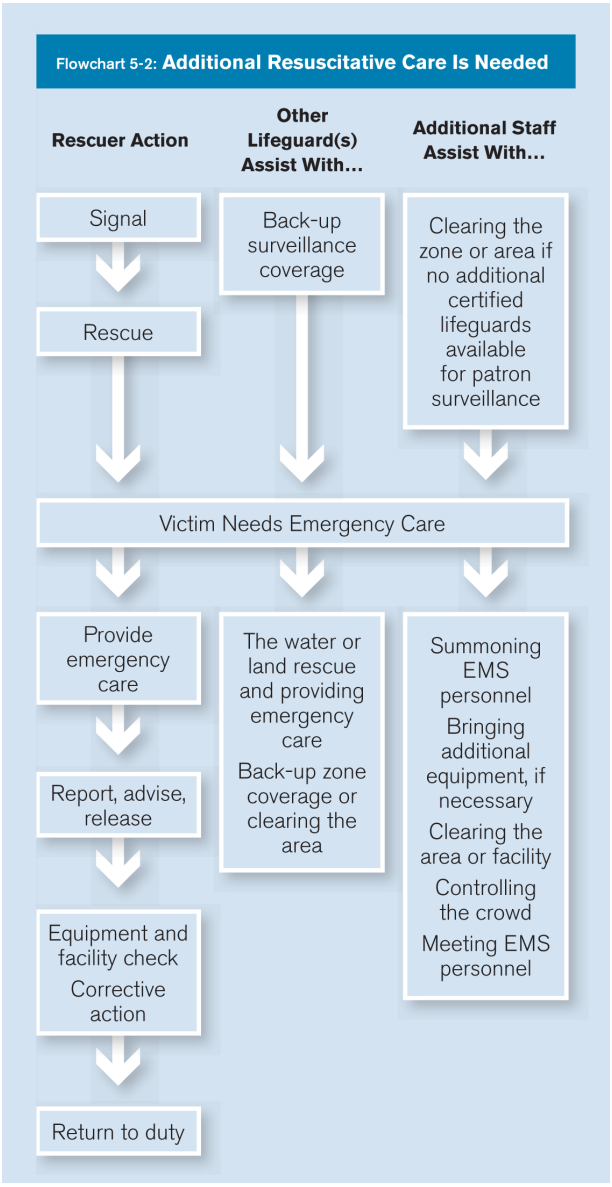
Knowing what to do will also help you respond more confidently when grace under pressure matters most. Planning for emergencies is the best way to most effectively deal with one when it happens.

Every facility including yours, should have written procedures that are specific to potential accident or emergency situations. This is called an emergency action plan, or EAP. Emergencies that should be addressed include injuries, illness, natural disasters and situations such as power failures or sudden flooding. Any emergencies common to your particular area should also be addressed. Figure 3-7 shows a sample EAP for a water emergency.

Within the EAP is the vital information responders need to know to get control of the situation, such as the facility layout, available equipment, roles and responsibilities of those involved, communication directives and proper follow-up procedures. See *Elements of an EAP.*

Figure 3-7





Elements of an EAP

Some important aspects that EAPs address include the following:

- Facility Layout
  - Facility access for emergency medical services (EMS) personnel
  - Location of rescue and first aid equipment
  - Exits and evacuation routes
  - Location of telephones and emergency numbers
  - Lifeguard stations and areas of responsibility

Continued on next page

Elements of an EAP *continued*

- Equipment
  - Rescue equipment
  - Personal protective equipment (gloves, mask and footwear)
  - First aid supplies
  - Emergency equipment (flashlights, fire extinguisher, etc.)
  - Communication equipment (radios, whistles, flags, telephones and air horns)
- Support Personnel Roles and Responsibilities
  - Facility personnel (lifeguards, lifeguard supervisor, pool manager, facility manager, etc.)
  - Coaches
  - Athletic trainers
  - Swim meet director
  - Officials and referees
  - Marshals
  - Athletic director
  - Clerical personnel
  - Maintenance personnel
- External Personnel Roles and Responsibilities
  - EMS personnel
  - Police
  - Firefighters
  - Hazardous materials (HAZMAT) response team
  - Power and gas companies
  - Chemical suppliers
- Communication
  - When and how to call 9-1-1 or the local emergency number (and how to access an outside phone line)
  - Chain of command
  - Person to contact—parent or guardian or family member of the victim
  - Designated person to deal with media if necessary
- Follow-Up
  - Completing appropriate documentation (incident report, accident report, USA Swimming Report of Occurrence form, etc.)
  - Checking and replacing equipment and supplies
  - EAP evaluation
  - Operational debriefing
  - Checking on condition of athlete

In the initial development of an emergency plan, the pool or facility management should consider every type of emergency, both life-threatening and non-life-threatening, that could occur at the facility. An emergency action plan should be in place for the most

common possible injuries. A detailed plan for emergencies should be put in writing in the operations manual for facility staff. The plan should be thoroughly reviewed and practiced regularly by all staff members.

Additional personnel who should be involved in the development and practice of emergency plans include local law enforcement and fire departments, EMS personnel, gas and power companies, water authority agencies and chemical supply companies. Each of these groups will have helpful information and can assist with ensuring methods and procedures are up-to-date.

As your facility puts in place its emergency action plan, your role is to thoroughly understand the plan, explain it to and practice it with your team, and provide management with feedback that will help improve it. The following questions can help you develop what is needed for training your team:

- Who does exactly what throughout all the identified steps of the plan, starting with who signals the emergency?
- How is an emergency signaled so that all members of your team know that the plan has been activated?
    - Who are the persons in charge?
    - What are the lines of communication with those individuals?
    - What are their responsibilities?
    - Who is the designated facility spokesperson?
- What are the local codes and guidelines?
- What are the responsibilities of your team during an emergency?
- Are the rescue and first aid equipment readily accessible and in good working condition?
- Is there a specific first aid area for care, such that care can be provided to protect the person's privacy as well as provide easy access for rescue personnel?

Check with facility management about what needs to be reported and documented.

But there is more than just having an EAP in place. The EAP needs to be practiced by those who would be involved in responding. And this means you, the coach, as well as members of your swim team. Such practice is important so that everyone knows how to activate the EAP and what his or her role is in the emergency. Consult with your facility management to learn about the EAPs that are in place at your facility and what your role and responsibilities, as well as those of your team members, are in implementing them.

Safety is very important for open-water environments as well. Although the basic safety issues must be addressed, open-water swimming presents some unique considerations for emergency action plans. See *Considerations for Open-Water Swimming Events*, which highlights these areas.



Considerations for Open-Water Swimming Events

The following issues should be addressed in emergency action plans or safety plans for open-water swimming events:

- Safety briefing or meeting to inform all personnel involved about emergency measures before the event, such as the night before
- Medical evacuation plan outlining detailed procedures and methods of transport for swimmers needing emergency care, from water pickup to land-based services; for example,
  - One plan if the start and finish of the race are the same or less than ¼ mile apart
  - Two plans if the start and finish of the race are not in the same location or are more than ¼ mile apart
- Specified procedure or mechanism for transport of swimmers to shore-based medical care in less than 10 minutes
- Safety monitoring stations positioned on course with a minimum of one station for every 30 swimmers or one station for every ¼ mile of course length as well as shore-based safety personnel at the finish
- Safety stations equipped with first aid supplies and an emergency signaling device to summon medical evacuation boat; stationary medical stations and/or mobile safety monitors
- Detailed plan for event cancellation after competition begins
- Accounting for every participant as each enters and exits the water; for example, a swimmer count
- Public briefing with all participants before the event addressing:
  - Opportunity for withdrawal
  - Obligations if participant quits or withdraws
  - Procedure for obtaining aid during event
  - Procedure for finishing
  - Positioning of selves in relation to other swimmers, such as faster swimmers in front
  - Course directions and markers
  - Event and course rules
  - Procedure for starts
- Absolute cut-off time for finishing
- Escort and pilot craft
- Procedure for heats if event is large

DISTRESSED SWIMMER AND DROWNING SITUATIONS

As a coach, one of the most important skills you need to have is the ability to recognize when a swimmer needs help. Someone in trouble may struggle at the surface for just a short time or may quickly disappear beneath the surface without any signs of distress. Others may be submerged already when the process of drowning begins, such as the person who has jumped or slipped into water

over his or her head and is struggling to reach the surface. A swimmer may be in distress or actively struggling to survive. Others may be passive and therefore unable to help themselves, showing little or no movement. Understanding these behaviors enables you to recognize quickly when someone needs help.

You will also need to know how to give help without further endangering the swimmer or yourself. In general, there are two types of swimmers who need help: distressed swimmers and drowning victims. The best response to the situation depends in large part on the type of emergency you face.

The Swimmer in Distress

A swimmer can become distressed for several reasons, such as exhaustion, cramp or sudden illness. A distressed swimmer makes little or no forward progress and may be unable to reach safety without assistance. Distressed swimmers may be able to keep their face out of the water and call or wave for help. They may be positioned horizontally, vertically or diagonally, depending on what they use to support themselves and they may be floating, sculling or treading water (Figure 3-8).

Figure 3-8

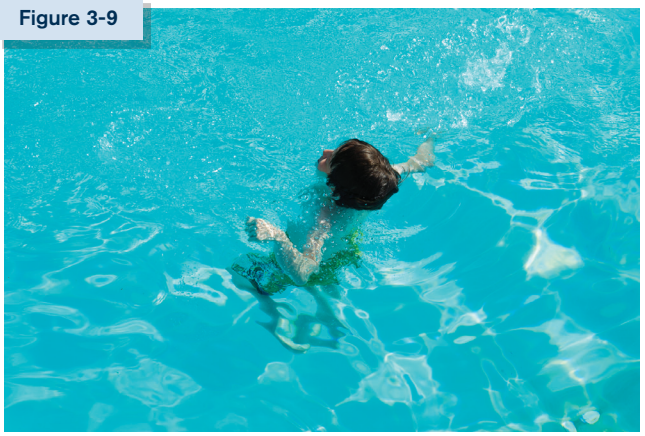


The distressed swimmer generally is able to reach for a rescue device. However, as conditions continue to affect the distressed swimmer, such as fatigue, cold or sudden illness, he or she becomes less able to support him- or herself in the water. As a result, his or her mouth moves closer to the surface of the water and anxiety increases. If a distressed swimmer is not rescued, he or she may become a drowning victim.

Drowning Victim—Active

A drowning victim who is struggling to remain at the surface of the water has distinctive arm and body positions. These are efforts to try to keep the mouth above the water's surface in order to breathe (Figure 3-9). A drowning victim who is struggling:

Figure 3-9



- Cannot call out for help because his or her efforts are focused on getting a breath.
- Works to keep the face above water in an effort to breathe. A young child may be in a horizontal face-down position during the struggle because he or she is unable to lift the face out of the water.
- Has extended the arms to the side or front, pressing down for support.
- Is positioned vertically in the water with no supporting kick. A young child may tip into a horizontal face-down position.

- Might continue to struggle underwater once submerged.
- Eventually will lose consciousness and stop moving.

A drowning victim does not make any forward progress in the water. All efforts are devoted to getting air. The victim might be able to stay at the surface for only 20 to 60 seconds, if at all.

Drowning Victim—Passive

Some drowning victims do not struggle. They suddenly slip underwater due to a medical condition or another cause, such as a heart attack, head injury, hyperventilation and prolonged underwater breath-holding activity or use of alcohol or other drugs. These drowning victims:

- Might float face-down at or near the surface (Figure 3-10) or might sink to the bottom.
- May be limp or have slight convulsive-type movements.
- Have no defined arm or leg action, no locomotion and no breathing.
- May appear to be floating, if at the surface of the water.
- May be face-down, on one side, or face-up, if at the bottom.

Figure 3-10



It can be difficult to clearly see a victim who is underwater or at the bottom of a pool because of glare, reflections, or water movement from the wind or other swimmers. The victim may appear to look like a smudge, an object like a towel, or a shadow.

Anyone who is exhibiting one or more of these signals for 30 seconds should be considered a drowning victim and be responded to immediately.

HOW THE COACH CAN ASSIST

While your first instinct may be to jump in the water to try to save a distressed or drowning swimmer, that is actually the worst thing to do. Responding to a distressed swimmer starts before the swimmers even get into the pool. Teach and remind swimmers that if they ever feel panicky, they should reach the lane lines and use them for support.

Of course, if the distressed swimmer is not able to help him- or herself, there are some things you can do, but *only* if you are in a safe position yourself and are able to maintain control of the situation. These include trying a reaching or throwing assist. For details on how to perform these assists, see the Appendix or the Resources section of the course. While you attempt to make an assist, you should tell someone in your group to call 9-1-1 or the local emergency number if needed.



Remember, the Red Cross recommends that lifeguards are on duty whose only responsibility is patron surveillance whenever there is activity in the water. Lifeguards are trained to recognize swimmers in need of help and respond. You should never respond to a distressed swimmer or drowning victim in a way that endangers your own life or further endangers the swimmer. Do not enter the water to aid a distressed swimmer or drowning victim unless you have special training to do so.

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CHAPTER 4

COMMON INJURIES AND MEDICAL CONDITIONS



BEFORE PROVIDING CARE

Coach Wilkins' team is working on dryland training this afternoon. While doing the exercises, two of his swimmers get their feet tangled in the stretch cords and they fall to the deck. Both swimmers get up and say they are okay. Coach Wilkins checks the area for safety and asks the swimmers, "Did you hit your heads?" They say, "No, we just landed on our hands and knees." Next he checks the swimmers and notices that one of the swimmers has several scrapes on her hand. The other swimmer has a cut on her knee. Both injuries result in minor bleeding. What should Coach Wilkins do next? How should he care for each swimmer?

When someone on your team has an injury or illness, it is your responsibility to help make sure the person gets the first aid care he or she needs. Just as important is making sure a swimmer's injury or illness does not also become *your* health problem.

Bloodborne Pathogens and Preventing Disease Transmission

Figure 4-1



Exposure to even small amounts of blood or body fluids while giving first aid places you at risk for the transmission of bacteria or viruses that cause illness. These are called *bloodborne pathogens* (bacteria or viruses present in blood and body fluids capable of causing disease in humans). And someone doesn't have to look or feel ill to pass them along. The good news is, there are some very easy things you can do to greatly reduce your risk of exposure. These are called standard precautions and include things like washing your hands before and after giving care and wearing personal protective equipment such as disposable nonlatex gloves, gowns, masks, face shields and protective eyewear (Figure 4-1). Standard precautions also includes: engineering controls such as using biohazard bags and labels; work practice controls such as disposing of sharp items in puncture-resistant, leak-proof, labeled containers and isolating contaminated areas so that others do not become exposed; and proper equipment and spill clean-up.

Whenever you are giving first aid, especially when there is any blood or body fluids, **always** use standard precautions and follow these guidelines:

- Wash your hands before giving care. Or use an alcohol-based hand sanitizer if soap and water are not readily available and your hands are not visibly soiled.
- Wear non-latex, disposable gloves when giving care.
- Change your gloves and wash your hands after giving care to one person and before giving care to another person.
- Avoid having your bare skin come into contact with blood or other body fluids. Wear protective coverings such as a mask, eyewear and gown if there is a likelihood of contact with blood or other body fluids through splashing.
- Wash your hands after providing care.

See the Resources section of the course to watch a video on standard precautions.



After providing care, you should clean and disinfect the equipment and surface. In some cases, you will need to properly dispose of certain equipment. Handle all soiled equipment, supplies and other materials with care until they are properly cleaned and disinfected. Place all used disposable items in labeled containers. Place all soiled clothing in marked plastic bags for disposal or washing and clean up any blood spills wearing appropriate personal protective equipment.

Use a common-sense approach when determining if an injured swimmer can return to the pool. Fresh, open wounds, even if dressed properly, can present a health danger to both the injured swimmer and others in the pool. Because open wounds can easily become infected, swimmers with open wounds should not be allowed to swim until the wound is healed. The **Centers for Disease Control and Prevention** provides additional information about preventing disease transmission.



How should Coach Wilkins respond? Once Coach Wilkins checks the scene for safety and checks the swimmers for life-threatening injuries, he is ready to give care. He needs the facility's first aid kit, but since he has other swimmers on deck, he should ask one of them to get it rather than leaving the pool area to get it himself. Then, after washing his hands, he would put on gloves and tend to the first swimmer's injuries, applying direct pressure to the wounds to control the bleeding, cleaning the wounds, applying antibiotic ointment if available and finally covering the wounds with adhesive bandages or sterile dressings. Then he would remove his gloves, wash his hands, put on a new pair of gloves and tend to the second swimmer's injury. He should restrict both swimmers from going back into the water until the wounds are healed.

HEAD, NECK AND SPINAL INJURIES

Coach Stevens has taught his swimmers the proper techniques for racing starts. They have practiced the starts many times. However, some swimmers are playing around on the starting blocks before practice and one pushes another into the pool. The swimmer enters the water head-first in a nearly vertical position, striking the top of his head on the bottom of the pool. What would be Coach Stevens' concerns for the swimmer entering the water head-first? What should Coach Stevens do?

Head, neck or spinal injuries often are caused by high-impact/high-risk activities. In aquatic environments, examples of these activities include:

- Entering head-first into shallow water.
- Falling from greater than a standing height.
- Entering the water from a height, such as a diving board, water slide, an embankment, cliff or tower.
- Striking a submerged or floating object.

- Receiving a blow to the head.
- Colliding with another swimmer.
- Striking the water with high impact, such as falling while water skiing or surfing.

A head, neck or spinal injury can be devastating to a person. The best way to deal with one is to prevent it altogether by being aware of the dangers that exist, and the behaviors that can lead to accidents. At aquatic facilities, for example, many head, neck and spinal injuries happen because of improper diving, jumping, falling or being pushed. And as you might expect, these injuries happen most often at the shallow end of the pool, in a corner of the pool or where the bottom drops off to deeper water. At open-water facilities, such as lakes or rivers, injuries tend to happen in areas where water levels vary due to tides or currents, or where there are underwater hazards, such as rocks or tree stumps. Of course, in any setting, a collision between swimmers could also result in a serious head, neck or spinal injury.

The tough thing is, a head, neck or spinal injury is not always easy to spot. Sometimes, of course, it is obvious. A person might have lost consciousness or have physical signals, such as bruising, bleeding and pain. At other times you will only be aware of the seriousness of an injury by observing things like an impaired mental state. Be alert for the signals of a potential head, neck or spinal injury, which may include the following:

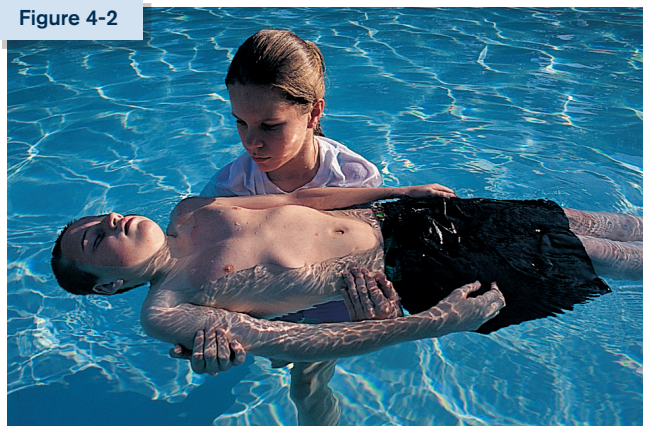
- Changes in level of consciousness
- Severe pain or pressure in the head, neck or spine
- Loss of balance
- Partial or complete loss of movement of any body area
- Back pain, weakness, tingling or loss of sensation in the hands, fingers, feet or toes
- Persistent headache
- Unusual bumps, bruises or a depression on the head, neck or spine
- Seizures
- Blood or other fluids in the ears or nose
- Heavy external bleeding of the head, neck or spine
- Impaired breathing or vision
- Nausea or vomiting
- Bruising of the head, especially around the eyes and behind the ears
- Victim holding his or her head, neck or back
- Behavior resembling intoxication

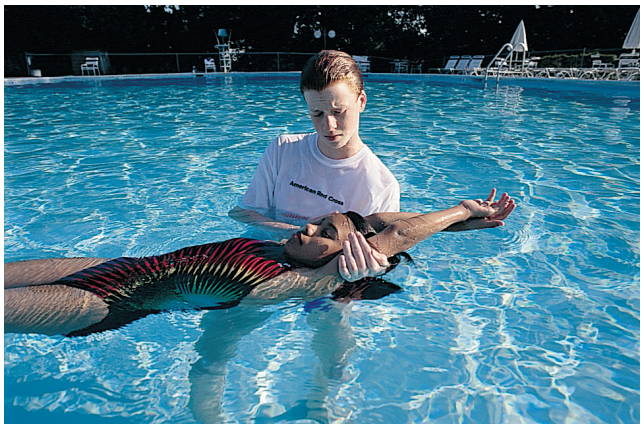
When in doubt, it is always best to err on the side of caution and assume an injury could have occurred.

Because even a seemingly minor head, neck or spinal injury can have major consequences if treated incorrectly, you should always let a lifeguard or a person with more advanced training respond first. However, if such a person is not around, you will need to act. Remember: the key to giving care to an injured person is to minimize movement of the head, neck and spine using a technique called in-line stabilization (Figure 4-2). See the Resources section of the course to watch a video on head, neck and spinal injuries.



Figure 4-2





Follow these general guidelines to care for a victim with suspected head, neck or spinal injury:

- Be sure someone has called 9-1-1 or the local emergency number. If other people are available, ask someone to help.
- Minimize movement of the victim's head, neck and spine. This technique is called in-line stabilization. For step-by-step details for skills used to correctly stabilize the head, neck and spine, see the Appendix of this supplement or the Resources section of the course.
- Position the victim face-up at the surface of the water. Keep the victim's face out of the water, allowing him or her to breathe.
- Check for consciousness and breathing once the victim's head, neck and spine are stabilized.
    - If the victim is unconscious and not breathing, immediately remove the victim from the water and provide resuscitation. Attempt to minimize movement of the head, neck and spine when removing the victim from the water.
    - If the victim is breathing, support the victim with his or her head, neck and spine immobilized until help arrives.



It is essential that you ensure that the victim is facing up, with his or her face out of the water so the person can breathe. Continue to offer this support until advanced medical personnel arrives.

What should Coach Stevens do? Coach Stevens should immediately suspect a possible head, neck or spinal injury and perform the skills necessary to minimize movement of the swimmer's head, neck and spine, such as the hip and shoulder support or head splint. To remove the swimmer from the water, if appropriate, a backboard and two rescuers are needed.

Concussions

Coach Hopkins has a group of 24 swimmers, ages 11 and under, practicing at the pool today. The swimmers are divided among four lanes. One of the swimmers decides to practice his backstroke start. At the same time, another swimmer is approaching the wall for a turn. As the backstroker comes off the wall, he collides with the oncoming

swimmer head-to-head. Immediately, they both stop and stand up, looking dazed and confused for a few seconds. They look over to the coach and tell her, "We're okay, Coach. We can keep going." What should Coach Hopkins do in this situation?

A concussion is a type of brain injury that involves a temporary loss of brain function after a blow to the head. It is a very common type of head injury in many sports including swimming. It is not always easy to tell if someone is suffering from a concussion, especially since he or she may or may not lose consciousness. In fact, while the effects of a concussion may occur immediately or very soon after a blow to the head, in some cases, it may be hours or even days before any changes are seen. These effects can then last for several days or even longer. Suspect a concussion if your swimmer shows any of the following signals:

- Confusion, which can last from moments to several minutes
- Headache
- Repeated questions asking about what happened
- Temporary memory loss
- Brief loss of consciousness
- Nausea and vomiting
- Speech problems
- Blurred vision or sensitivity to light

If you suspect a concussion, you need to act swiftly.

Follow these guidelines if you suspect a concussion:

- Get the swimmer out of the water and restrict him or her from further practice.
- Have the swimmer seek care from a health care provider.
- Keep the swimmer from practice until his or her signals completely disappear and the swimmer is medically cleared by the health care provider. This may take 7 to 10 days or longer. The health care provider should advise when a swimmer can resume water activities.
- Once the signals resolve, gradually allow the swimmer to return to practice and swimming, making sure that he or she is closely supervised.

Remember, a person should stop all activity until all signals of concussion disappear. **The National Federation of State High School Associations** has suggested guidelines for the management of concussion in sports and the **Centers for Disease Control and Prevention** has additional information on concussion in sports.



What should Coach Hopkins do? Coach Hopkins needs to be alert to the fact that there is a potential risk of concussion for both swimmers because the swimmers collided head-on. She needs to monitor each swimmer for signals of a head injury, keeping in mind that loss of consciousness does not always occur. She also needs to notify the swimmers' parents about what happened and recommend that each swimmer follow up with their health care provider and receive an evaluation. In the meantime, the swimmers should leave the water.

Allowing them to continue to practice would be inappropriate because each of them showed signals of a concussion; that is, being dazed and confused immediately after the incident.

HYPOTHERMIA

Coach Patrick's team is practicing in an outdoor pool. The water temperature is 72° F. Most of the swimmers are fine "as long as they keep moving," but a few swimmers are visibly shivering with chattering teeth and blue lips. Coach Patrick tells those swimmers to get out, instructing them to take warm showers and get into warm clothing. The rest of the swimmers stay in the pool. Did Coach Patrick do the right thing or should he have gotten all the swimmers out of the pool?

Swim practice does not always happen in ideal weather conditions. Cloudy skies are not likely to cancel practice, but they can make the day unseasonably cool. Likewise, early season or early morning practices often do not have the benefit of the hot sunshine to keep swimmers warm between sets. Is a slightly cooler than normal day cause for vigilance when it comes to hypothermia? Well, in truth, the answer can be yes.

Hypothermia is a life-threatening condition in which the body's core temperature drops below normal. This can happen when cold or cool temperatures cause the body to lose heat faster than it can be produced. Young swimmers and very lean swimmers are usually the most susceptible. When the body is in cold water, the following occurs:

- The temperature of the skin and blood in the extremities drops quickly.
- Initially, the person will have trouble breathing, and then may slowly become unable to use the arms or legs.
- The temperature of the heart, brain and other vital organs gradually drops.
- Shivering begins.
- The person may become unable to think clearly.
- The person may become unconscious. If the temperature drops further, death from heart failure may occur. However, drowning may occur first.

Temperatures do not have to be extreme for a person to develop hypothermia. Nor does the swim event have to be in open water or even outdoors. A person's age, physical activity and state of health, combined with environmental conditions such as wind and humidity, can increase his or her susceptibility to hypothermia. Add in prolonged exposure to water or wet clothing, and the chances of hypothermia increase even more—even in summer or in indoor facilities.

Coaches of open-water swimmers must be especially aware of the signals of hypothermia. But because hypothermia can happen in many different situations, all swim coaches must be fully prepared to recognize and care for hypothermia.

Signals of hypothermia include shivering; numbness; a glassy stare; apathy, weakness, indifference or impaired judgment; and loss of consciousness. If a person experiences hypothermia:

- Summon emergency medical services (EMS) personnel.
- Gently move the person to a warm place.
- Remove any wet clothing.
- Warm the person by wrapping all exposed body surfaces in blankets or by putting dry clothing on the person. Be sure to cover the head since a significant amount of body heat is lost through the head (Figure 4-3).
    - Do not warm the person too quickly such as by immersing him or her in warm water.
    - If alert, give the person warm liquids to drink. Make sure the liquids are warm but not hot. Do not give liquids that contain alcohol or caffeine.

Figure 4-3



- Continue to give care and monitor the person until EMS personnel arrive and take over.



See the Resource section of the course to watch a video segment on cold-related emergencies.

Did Coach Patrick do the right thing? Coach Patrick recognized the swimmers who were in jeopardy, that is, those who were shivering and had chattering teeth and blue lips. He did the right thing by getting them out of the water and having them take actions to get warm. But what about the other swimmers? Coach Patrick should monitor the other swimmers and continue to watch for any signals of temperature-related issues. He should instruct any swimmers who are showing signals to get out of the pool and take steps to warm up.

HEAT-RELATED EMERGENCIES

Coach Bailey is conducting an outdoor swim practice at midday. It is sunny, hot and humid. The air temperature is 103° F. The swimmers are complaining that the water is too hot and several say that they feel nauseated and dizzy. Coach Bailey is wearing a large straw hat and drinking water. Her assistant is flushed, sweating profusely and complaining of a headache. Coach Bailey tells the swimmers and her assistant that it will be just as hot and uncomfortable at the championship meet next weekend, so they all better get used to the conditions. She continues the practice. Was Coach Bailey correct in her actions?

Just as hypothermia occurs when the body cannot effectively warm itself, heat-related emergencies can occur on hot, humid days when the body is not able

to effectively cool itself through sweating or perspiration. As a result, the body temperature rises, and a person can become seriously ill. Heat-related emergencies can even be life-threatening.

There are three kinds of heat-related emergencies: heat cramps, heat exhaustion and heat stroke. Though it might seem hard to believe that someone could overheat in a pool, it can and does happen. Young swimmers and lean swimmers are particularly vulnerable (Figure 4-4). But anyone who does hard work or exercises in the heat is at risk. As a coach, you are too! Trouble occurs when fluid is lost during heavy sweating. Swimmers do sweat during workouts, even in water.

Figure 4-4



The key is being able to recognize the signals of heat-related emergencies before they progress to a serious threat. Signals of heat cramps include painful muscle spasms, usually in the legs and abdomen. Signals of heat exhaustion include:

- Cool, moist, pale, ashen or flushed skin.
- Headache.
- Nausea and dizziness.
- Weakness and exhaustion.
- Heavy sweating.

Heat exhaustion can quickly progress to heat stroke. The signals of heat stroke include:

- Red, hot, dry skin.
- Changes in level of consciousness.
- Rapid or weak pulse.
- Vomiting.

Heat stroke is a life-threatening emergency that requires immediate care and transport to a medical facility.

If you see the signals of a heat-related emergency, you will need to move the person to a cool place, loosen any tight clothing and remove perspiration-soaked clothing. Then, you will need to cool the person by spraying him or her with cool water or applying cool wet towels to the skin. You can also fan the person. Finally, if the person is conscious and able to swallow, you will want to give him or her small amounts of cool water, a commercial sports drink or milk. Sometimes though, these steps are not enough to get the person out of danger. If the person's condition does not improve or if you suspect heat stroke, you will need to call 9-1-1 or the local emergency number and continue to give care until EMS personnel arrive.



See the Resources section of the course for a video segment on heat-related emergencies.

So, was Coach Bailey correct? Coach Bailey may have been jeopardizing the health and safety of her athletes, her assistant and herself. She should be able to recognize the signals of heat cramps, heat exhaustion and heat stroke. Based on the complaints, some of the swimmers and Coach Bailey's assistant may already be developing signals of heat exhaustion.

Hydration

While at practice yesterday, several of Coach Bailey's swimmers and her assistant coach complained about the heat and humidity. A few of the swimmers felt nauseated and dizzy. According to the weather forecast, it is expected to be even hotter today than yesterday. Several of the parents express a concern about the heat and having a midday practice in the sun. One parent asks Coach Bailey what her son should drink before practice and during the day to stay hydrated. Coach Bailey tells her water should be fine. Is she right?

The best prevention strategy for heat-related emergencies is proper hydration. Staying hydrated helps to make sure the fluids lost from sweating are replaced, which keeps fluid levels in the body balanced and gives body tissues what they need to function well. Staying properly hydrated is important for everyone—your swimmers, your assistants and you! Remember, working or exercising strenuously in the heat leads to sweating. Just because swimmers are exercising in water does not mean that they do not get hot or sweat. But swimmers may not realize they are sweating because their skin is moist from being in the water. The large amounts of fluid lost while sweating need to be replaced, and as the coach, you need to make sure your swimmers drink fluids before, during and after practice to stay hydrated. And you need to make sure that you and your assistants stay hydrated, too! Use the following guidelines to help your swimmers stay hydrated:

- Encourage your swimmers to drink water; it is the best choice of fluid. Alternatively, encourage fluids such as commercial sport drinks, fruit juices or milk.
- During practice, encourage your swimmers to drink a few ounces every 15 to 20 minutes, or however much they need to never feel thirsty. The feeling of thirst means that the body is already dehydrated.
- Discourage swimmers from gulping down fluids only at the end of practice.
- If the practice is longer than 90 minutes, advise your swimmers to use a sports drink specifically, because sports drinks are enhanced with the necessary electrolytes the body loses during a long workout.
- And lastly, remind swimmers that they should continue to replace fluids after practice is done.

So was Coach Bailey's recommendation correct? Yes, drinking water before any activity is ideal. But, she could also suggest drinking an electrolyte-based sports drink during and after the practice to replace any fluid and fuel lost during the workout. But some cautions are needed, too. Any drinks used should not contain caffeine and salt. When drinking the fluid, sips instead of drinking large volumes all at once, are best. In addition to ensuring that the swimmers are properly hydrated, Coach Bailey should consider earlier or later times for practice to limit the exposure of the swimmers during the heat wave.

SOFT TISSUE INJURIES

Soft tissues are the layers of skin and the fat and muscle beneath the skin's outer layer. An injury to the body's soft tissue is called a wound. Any time the soft tissues are damaged or torn, the body is threatened.

Controlling External Bleeding

As Coach Applegate arrives at the pool's parking lot for practice late in the afternoon, he sees two of his swimmers, Natalie and Megan, rushing into practice. All of a sudden, Natalie trips and falls, dropping her glass bottle in the parking lot. She avoids hitting her head, but suffers a deep laceration to her forearm that is actively bleeding. The scene is safe. Coach checks Natalie and finds that she is awake, alert and is not having trouble breathing. She has no other obvious injuries, except for her bleeding forearm. Coach Applegate tells Megan to go get the first aid kit. Megan quickly returns with the kit and Coach puts on nonlatex, disposable gloves. Then he puts a gauze pad on the wound and applies pressure for a few seconds.

Next he elevates the arm over the level of the heart to stop the bleeding. After about 30 seconds, Coach removes the pad to check the wound. It is still bleeding. Why? Is this the correct procedure?

Scrapes, cuts and puncture wounds are soft-tissue injuries. Whether superficial or serious, there is one thing that nearly all types of soft-tissue injuries have in common, and that is external bleeding. While most bleeding you encounter as a coach will likely be minor, all bleeding must be carefully treated (Figure 4-5).

Figure 4-5



The most important thing to remember is the use of standard precautions. As you learned earlier, you do not want to become a victim yourself by becoming exposed to bloodborne pathogens. Always protect yourself by putting on disposable gloves and any other personal protective equipment that might be needed, such as a face shield or protective eyewear if there is a likelihood that blood could splash or spurt. Once protected, you will need to take steps to stop the bleeding as soon as possible.

When giving care for a bleeding wound, keep in mind the following:

- Gloves are used as part of standard precautions anytime there is a risk of exposure to a person's blood or body fluids.
- The time it takes for bleeding to stop varies, but bleeding from small cuts usually stops by itself within 10 minutes.
- When giving care, you need to control the bleeding by placing a sterile dressing over the wound and applying direct pressure using the flat part of your fingers.
- If the wound is large, you may need to use more pressure. Try applying pressure with your full hand.
- If the dressing becomes saturated with blood while you are applying pressure, you should not remove it. Instead, place additional dressings over the soaked bandage and reapply direct pressure. Then cover the dressings with a bandage to hold them in place.
- Keep the injured person warm and positioned on his or her back.

RESOURCES

See the Resources section of the course for a video segment on caring for a bleeding wound.

Did Coach Applegate act appropriately? Coach Applegate acted correctly and incorrectly. Coach was correct in telling someone to get the first aid kit, putting on gloves and applying pressure to the wound. But he should have had someone call 9-1-1 when he found that the bleeding was not stopping. Also he should not have elevated the arm. Elevation is no longer recommended to help stop bleeding. Plus Coach Applegate should not have removed the blood-soaked dressing. Instead he should have added more dressings on top of one another and continued to apply direct pressure.

Shock

Several minutes have gone by since Natalie cut her arm on the glass. Coach has moved her to a bench nearby where she is sitting quietly and waiting for her parents to come back. Coach notices that the bandage has soaked through again and he cannot seem to stop the bleeding. He applies more pressure to the wound and continues to check her. While talking with her, Coach notices that Natalie is becoming pale and sweaty. He asks her how she feels and she says, "a little nauseous, but I really would like something to drink." Should Coach Applegate offer her some water? What other actions may be appropriate?

There may be a time when you are not able to stop a wound from bleeding. And this can lead to another danger. Specifically, if bleeding is severe enough and cannot be controlled, a serious, life-threatening condition called shock can occur.

Shock occurs when the circulatory system fails to deliver enough oxygen-rich blood to the body's tissues and vital organs. Without enough blood supply, the body's organs do not function properly and a series of responses is triggered as part of the body's attempt to maintain adequate blood flow. You will need to recognize the signals of shock in order to identify when it is occurring, including the following:

- Restlessness or irritability
- Altered level of consciousness (LOC)
- Pale or ashen, cool, moist skin
- Nausea or vomiting
- Rapid breathing and pulse
- Excessive thirst

When signals of shock appear, it usually means that the person's condition is worsening. You need to act fast. When a person is in shock, first aid by itself will not be effective. Most importantly, a person in shock needs emergency medical care as soon as possible. Follow these steps:

1. Call 9-1-1 immediately.
2. Monitor the person's condition and watch for changes in LOC.
3. Control any external bleeding.
4. Keep the person from getting chilled or overheated.

5. Have the person lie flat on his or her back.
6. Cover the person with a blanket to prevent loss of body heat but do not overheat (Figure 4-6).
7. Comfort and reassure the person until EMS personnel take over.
8. Administer emergency oxygen, if available and if you are trained to do so.
9. Do not give food or drink.

Figure 4-6



See the Resources section of the course to watch a video segment on caring for a person in shock.



How should Coach Applegate act? Coach Applegate needs to be alert that his swimmer is showing signals of shock. This is a life-threatening situation that also requires someone to call 9-1-1, if this has not been done so already. Coach Applegate should have the swimmer lie flat on the ground and keep her warm, using whatever items are available, such as dry towels, blankets, jackets or other items. Most importantly, he should NOT give her any fluids to drink.

Burns

After a long sunny day on the pool deck conducting staggered practices for the club team, Coach Clarke heads into the office to check on her assistants. As Coach enters the office, she hears her assistants and several lifeguards commenting that Coach Luke clearly forgot to use sunscreen on his back and neck. The area is bright red and a few small blisters have formed. One of the assistants is about to place an ice pack on his back while another opens a bottle of aloe. Are Coach Clarke's assistants doing the right thing?

Burns are another type of soft tissue injury. While they are often caused by an obvious heat source such as an open flame or steam, they can also come from things like chemicals, electricity and radiation. Solar radiation causes the type of burn most often seen around swimming pools: sunburn. While sunburn is likely to be the most common burn injury you will provide help for as a coach, you also need to be prepared to care for other more serious burns that happen under your watch. To do so, you will need to understand all types of burns, especially because each type has a unique set of care steps.

Burns may be classified by their depth as follows:

- Superficial burns, affecting only the top layer of skin and appearing as red and dry skin with pain and possible swelling
- Partial-thickness burns, involving the top layers of the skin and appearing red, with open or closed blisters and pain
- Full-thickness burns, affecting all layers of the skin and some or all of the underlying structures with skin appearing brown or black and underlying tissues appearing white; with or without pain

Figure 4-7



Burns from the sun are usually superficial (Figure 4-7). But when blistering appears, a partial-thickness burn results. If a person experiences sunburn, the care is the same as if the person was burned by heat. You would remove the person from the source of the burn and cool the burn, usually with large amounts of cool running water. Then you would cover the burn loosely with a sterile dressing. You should NEVER apply ice or ice water to a burn because these methods can cause the body to lose heat rapidly and further damage the tissues. NEVER break any blisters or use any type of ointment or butter on a burn.

Did the assistant plan on doing the right thing? Coach Luke has suffered a partial-thickness burn by the sun based on the reddened skin and the appearance of blisters. He should be seen by a health care provider. He is out of the sun, so the source of the burn is removed. The assistant should cool the area with cool water (tap water) for several minutes and until pain resolves. Do not apply ice packs or ointments of any kind.

MEDICAL CONDITIONS IN SWIMMERS

A wide range of medical conditions may affect swimmers which is beyond the scope of this text. However, the most common conditions are discussed. The best way for a coach to be aware of any potential problem is to have every team member complete a medical history once a year. This information can alert you to the need to observe a specific individual carefully.

Asthma

Coach Gordon has noticed that an increasing number of swimmers in his training group are bringing quick relief inhalers to practice. The inhalers are lying all over the pool deck. He is tired of tripping over them and announces that from now on all inhalers are to be in the swimmers' bags, which are stored in the bleachers during practice. Is this an appropriate way to handle the problem with the inhalers? What factors may be contributing to the increased use of inhalers?

Asthma is a common medical condition, and chances are one of the swimmers on your team has it. If so, you will need to know what to do if that person has an asthma attack or his or her condition worsens.

When someone has asthma, his or her airways (the small tubes in the lungs through which a person breathes) have ongoing swelling. When exposed to an asthma trigger, the airways get even more narrow or blocked and the person has trouble breathing. Possible triggers may include air pollution, odors, temperature extremes and exercise. However, a trigger for one swimmer may not be the same as a trigger for another swimmer.

An asthma attack is the sudden worsening of asthma signals caused by a tightening of muscles around the airways. Some signals that a person may be having an asthma attack include heavy breathing and difficulty speaking in full sentences. See *Signals of Asthma (Including Silent Chronic Asthma).*

Signals of Asthma (Including Silent Chronic Asthma)

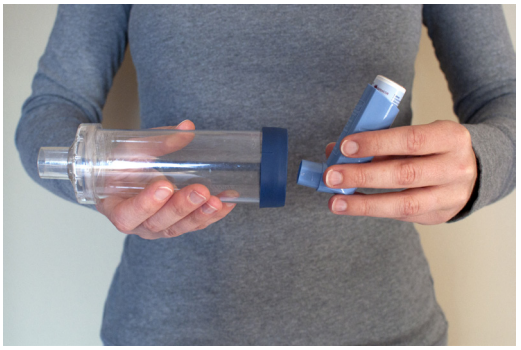
- Chest tightness or pain
- Wheezing
- Cough
- Excessive sputum production with exercise
- Shortness of breath, out of proportion to exercise intensity
- Difficulty breathing
- Rapid, shallow breathing
- Sweating
- Fatigue
- Poorer performance than training would predict
- Stomachache
- Sore throat with exercise
- Decreased exercise endurance (feeling out of shape)
- Inability to keep up with peers of similar skill or ability
- Inability to talk without stopping for a breath
- Feeling of fear or confusion

Many people with asthma use inhalers for their condition. These inhalers can be either quick-relief inhalers or long-term inhalers and may involve the use of a spacer for effective delivery of the medication to the lungs (Figure 4-8). As a coach, you need to know if one of your swimmers has asthma, whether the swimmer uses a rescue inhaler, and if so, whether the swimmer carries the rescue inhaler with him or her.

In the event of an asthma attack, you need to know what to do if the swimmer has an asthma attack. This means staying calm, getting the swimmer out of the water and having the swimmer use his or her quick relief inhaler. See *Assisting with an Asthma Inhaler.*

Figure 4-8





Assisting with an Asthma Inhaler

You may need to assist a person with asthma in using an inhaler. Before doing so, obtain consent and then follow these general guidelines, if local protocols allow:

1. Help the person sit up and rest in a position comfortable for breathing.
2. If the person has prescribed asthma medication, help him or her take it.
3. Shake the inhaler and then remove the cover from the mouthpiece. You or the person should position the spacer if using one.
4. Have the person breathe out fully through the mouth and then place the lips tightly around the inhaler mouthpiece.
5. Have the person inhale deeply and slowly as you or the person depresses the inhaler canister to release the medication, which he or she then inhales into the lungs.
6. Have the person hold his or her breath for a count of 10. If using a spacer, have the person take 5 to 6 deep breaths with the spacer still in the mouth, without holding his or her breath.
7. Once the inhalation is complete, have the person rinse his or her mouth with water to reduce side effects.
8. Monitor the person's condition.

In addition, follow these guidelines:

- Work with any athlete to be sure that any medication is readily available during swim practice. Appropriate places may include equipment bags at the end of the lane or in another agreed-upon, easy-access location. All medications should be labeled with the swimmer's name and prescription information.
- Make sure that the athlete keeps the inhaler in a plastic bag for protection.
- Be alert if the athlete is using an inhaler more than 2 to 3 times during a workout. This is a red flag that indicates that the swimmer's asthma is not under control and/or the athlete is not using the medication as directed.
- Question the athlete about his or her use of the inhaler, such as "Did your doctor give you specific directions on how and when to use it? What are those directions?"
- If necessary, consider talking with the athlete's parents about the concern.
- Avoid making medical recommendations.
- Encourage the athlete to speak with his or her doctor and get a written plan of action for dealing with the attacks if he or she needs to use the quick-relief inhaler frequently. Be sure to share this plan with all the coaches responsible for the swimmer on the pool deck.



See the Resources section of the course to watch a video on caring for a person experiencing an asthma attack. Remember, it's not always easy to spot an oncoming attack. If ever you are in doubt or if the person's condition appears to be worsening despite using the rescue inhaler, call 9-1-1 or the local emergency number.

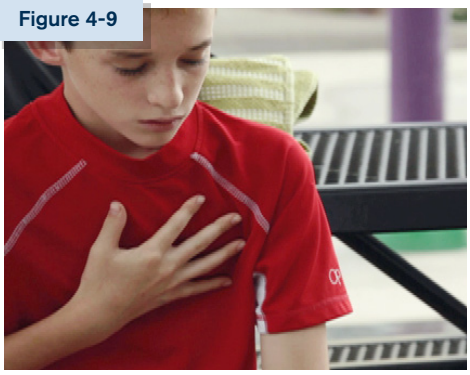
Were Coach Gordon's actions appropriate? The inhalers should be in the swimmers' equipment bags on the pool deck, either at the end of the lane or at another designated location on deck, such as on a specific table or pinned to a

bulletin board. Alternatively, the coach could designate a place for the inhalers, but they must be readily available for the swimmers. Banning them to the swimmers' bags on the bleachers could be problematic in an emergency situation. Numerous factors may be contributing to the increased use of inhalers including the facility's air quality and temperature as well as the presence of any odors.

Exercise-Induced Asthma

Swim championships are just around the corner and Coach Lee's team is working hard to prepare for another successful meet. Following the opening warm-up, one of the swimmers, Sarah, appears to be struggling and elects to grab a kickboard instead of doing freestyle sprints. Coach Lee is not sure, but it appears that Sarah cannot catch her breath. When Coach Lee asks what is going on, Sarah says, "I'm just a little winded but I'll be fine." After her next lap, Coach Lee checks in with Sarah and realizes that she can only speak one or two words without taking a breath. He also notices that she is making a whistling noise when she exhales. What should Coach do?

Figure 4-9



Exercise-induced asthma (more recently called exercise-induced bronchospasm) is asthma that occurs with exercise, either during the activity or soon after. As a coach, you need to be especially aware if exercise is an asthma trigger for one of your swimmers. The signals and care for exercise-induced asthma are the same as for an athlete experiencing any asthma attack (Figure 4-9). See the Resources section of the course to watch a video on caring for a person experiencing an asthma attack.

Athletes with asthma may need an individualized exercise program to help prevent an attack. If not, you may want to help organize one for them. In many cases, stretching, jogging and short sprints will alleviate chest tightness before competition. Programs must be set up for swimmers depending on their individual pattern of exercise-induced asthma. There are three main areas of focus for asthmatic swimmers and their coaches when developing such a program.



1. Develop a baseline of knowledge about asthma in general, as well as the swimmer's particular case. No two asthma cases are the same. The more you know about your swimmer's particular case and symptoms, the better they can be managed. The best way to go about this is through a health care provider. Understand the importance and purpose of the swimmer's medications. Learn how weather, chemicals in the pool, simple upper respiratory infections and allergies may trigger the swimmer's asthma.
2. Organize a plan of action with the swimmer and health care provider. The plan should include:
    - *The health care provider's instructions* including what medicines to take, when to take them and the proper techniques for inhaler use by the swimmer.

- *Swimming-related plans,* such as longer warm-up before beginning a main set to help the swimmer's lungs become acclimated to the environment and exercise in general and warm-up and warm-down at competitions to help the swimmer's body be able to handle the lack of oxygen during a race.
- *Out-of-water influences* including using a proactive approach such as adhering to the medication plan and avoiding triggers.

3. Focus on the mental side of asthma. Many swimmers listen to their health care providers, take all of their medications at the proper time and dosage and even try to avoid the allergies that trigger their asthma. But some never fully believe in themselves and their ability to deal with their disease. Sometimes, these athletes are less likely to be as meticulous about hydration, use of chronic medications to avoid problems, early intervention with their rescue inhalers when the first signs of bronchospasm appear and strict attention to their warm-up protocols. Empower the asthmatic athlete to achieve.

Dealing with a medical condition such as asthma can be draining both physically and mentally. See Personal Words from Peter Vanderkaay—Three-time Olympic Medalist for an example of how an elite athlete dealt with the condition.

Personal Words from Peter Vanderkaay—Three-time Olympic Medalist

I started swimming competitively at age 7 and I was diagnosed with asthma at age 10. Initially, it was scary and discouraging to think that asthma would be something that could keep me out of the pool. At the time, I didn't understand the disease and I wasn't educated on how to deal with it. I struggled with asthma for much of my youth because I wasn't proactive in working to control it. As I got older, I became much better at communicating with my doctor to make sure it was managed properly. During this time, I realized that it was no longer an athletic death sentence to have asthma. I learned that many Olympic level swimmers also had asthma and it didn't stop them from reaching the pinnacle of the sport. Asthma taught me to be tougher because it was something I always knew I had to overcome. I'm very competitive and I knew that if I could out-train people while dealing with asthma, there's no way they could beat me come race day. I truly believe that what I originally thought was a disadvantage, morphed into an advantage because in the back of my mind, I knew I always worked harder because of my asthma. Mentally, it gave me an edge over my competitors.



Peter Vanderkaay, winner of 2 gold and 2 bronze Olympic medals and 4 gold World Champion LCM medals.
(Photo courtesy of www.djsmithphotography.blogspot.com.)

What should Coach Lee do? Coach Lee is correct in determining that his swimmer is clearly having difficulty breathing. Most likely, she appears to be having an asthma attack. Although many things including exercise can trigger asthma, the treatment is the same. First, Coach Lee should remain calm and get the swimmer out of the water. If the swimmer has asthma and has a quick-relief inhaler, she should self-administer it or be assisted to use it by a trained individual. However, if the medication does not work or if she has no history of asthma and is in visible distress, Coach Lee or another person should call 9-1-1 or the local emergency number.

Seizures

A seizure is a loss of body control that occurs when brain functions are disrupted by injury or illness. Even if you know someone on your team is prone to seizures, it can be a bit scary to witness, especially when a swimmer has a seizure in a pool.

If someone on your team has a seizure disorder such as epilepsy, he or she most likely has medications to control the seizures. Yet even with medication, the swimmer may still have occasional seizures, so you should be prepared.

If one of your swimmers begins to have a seizure, the goal for care is to simply protect the person from injury during the seizure. If the seizure happens on dry land, you should make sure there is nothing close to the person that could cause them harm while the seizure is occurring. If the person is in the water, you will also need to make sure his or her airway stays open by supporting the person's head above water (Figure 4-10). You should call 9-1-1 or the local emergency number when appropriate.

Figure 4-10



If a swimmer has a seizure in the water:

1. Call or have someone else call 9-1-1 or the local emergency number.
2. Support the swimmer with the head above water until the seizure ends.
3. Get the swimmer out of the water as soon as possible after the seizure (since he or she may have inhaled or swallowed water).
4. Place the swimmer face-up on the deck and check for breathing and other injuries. Perform ventilations or CPR if needed. If the swimmer vomits, turn the swimmer on his or her side to drain fluids from the mouth. Sweep out the mouth.



See the Resources section of the course to watch a video on how to care for a person having a seizure.

Anaphylaxis and Allergic Reactions

After a successful meet, the team is celebrating on the bus ride home with some homemade snacks supplied by the swimmers' parents. As Coach Baker walks up the aisle to talk to some swimmers, he hears a commotion toward the back of the bus. One of swimmers is covered in a rash and has some hives on his face and neck. He is awake, alert and sitting comfortably. His only complaint is that he "feels a little itchy." Coach Baker knows that this swimmer has a history of peanut allergies. So he asks, "Did you eat anything with peanuts in it?" Unfortunately, no one knows what's in the cookies he just ate. Because of his allergy history, his epinephrine auto-injector is in the first aid kit in the front of the bus. The bus is about eight minutes from returning home to meet the parents. What should Coach Baker do?

Seasonal allergies are common, and can be an annoyance, but are not usually cause for much worry in terms of the health and well-being of your team. But what if someone on your team has an allergy that is more serious—even life-threatening? As with any emergency, you have to be prepared to respond!

Allergic reactions are caused when the body's immune system reacts to substances called antigens or allergens. When the body recognizes an antigen, it responds by releasing antibodies to fight off these foreign substances and remove them from the body. Common allergens include foods, insect bites or stings, pollen, animal dander, food additives, medication and chemicals (Figure 4-11). Typically, with a mild reaction, a rash or hives may appear and the person may complain of itching. However, if the reaction is severe, it can lead to anaphylaxis, a life-threatening condition requiring immediate care.

Figure 4-11





Anaphylaxis usually occurs suddenly within seconds or minutes after contact with the substance. The skin or area of the body that comes in contact with the substance usually swells and turns red. Signals include the following:

- Swelling of the face, neck, hands, throat or other body part
- Itching of the tongue, armpits, groin or any body part

- Weakness, dizziness or confusion
- Redness or welts on the skin
- Red, watery eyes
- Nausea, abdominal pain or vomiting
- Rapid heartbeat
- Wheezing
- Difficulty breathing or shortness of breath
- Difficulty swallowing
- Tight feeling in the chest and throat
- Low blood pressure
- Shock

As a coach, you need to find out if any of your swimmers have allergies and what these allergies are. Also, you need to know what the swimmer does if he or she experiences an allergic reaction. For example, does the swimmer use an auto-injector and if so, where does the swimmer keep it?

If you suspect anaphylaxis, call 9-1-1 or the local emergency number if the person is having trouble breathing, complaining of tightness in the throat, explains that he or she is subject to severe allergic reactions or becomes unconscious. Closely check the person from head to toe and help with measures to relieve any respiratory distress, such as having the person rest in the most comfortable position for breathing. See the Resources section of the course to watch a video on anaphylaxis.



Many times, individuals who have experienced anaphylaxis carry a prescribed epinephrine auto-injector. If it is available, you should help the person use it. See *Assisting with an Epinephrine Auto-Injector.*



Assisting with an Epinephrine Auto-Injector

Before assisting with an epinephrine auto-injector:

- Determine whether the person already has taken epinephrine or antihistamine. If so, DO NOT administer another dose, unless directed to do so by more advanced medical personnel.
- Check the label to confirm that the prescription of the auto-injector is for the person.
- Check the expiration date of the auto-injector. If it has expired, DO NOT use it.
- Confirm that the liquid is clear and not cloudy, if the medication is visible. If it is cloudy, DO NOT use it.
- Leave the safety cap on until the auto-injector is ready to use. Carefully avoid accidental injection when assisting a person by never touching the needle end of the device.

Two injectable epinephrine systems are available commercially, by prescription only, in spring-loaded syringes that function when pressed into the thigh. They are the EpiPen® (which includes one dose) and Twinject® (which includes two doses).

Continued on next page

Assisting with an Epinephrine Auto-Injector *continued*

To assist with administering epinephrine:

1. Locate the outside middle of one thigh to use as the injection site, ensuring that there are no obstructions to the skin, such as keys, coins or seams.
2. Grasp the auto-injector firmly in your fist and pull off the safety cap with your other hand.



3. Hold the (black) tip (needle end) near the person's outer thigh so that the auto-injector is at a 90-degree angle to the thigh.
4. Quickly and firmly push the tip straight into the outer thigh. You will hear a click.



5. Hold the auto-injector firmly in place for 10 seconds, then remove it from the thigh and massage the injection site with a gloved hand for several seconds.



If using Twinject:

1. Remove the device from the hard case.
2. Remove the green cap, labeled "1." You will see a red tip. Do not put your thumb, finger or hand over the red tip.
3. Remove the green cap, labeled "2."
4. Place the red tip against the middle of the outer thigh, press down hard until the needle enters the thigh (it will go through light clothing), and hold for a count of 10.
5. Remove the Twinject from the thigh. Check the rounded, red tip. If the needle is exposed, the dose was given.
6. Continue to monitor the person's condition and observe the person's response to the epinephrine.
7. Place the used auto-injector in a proper sharps container and give it to more advanced medical personnel when they arrive.

Only the victim should self-administer the second dose included with the Twinject injector. Check state and local regulations regarding use of prescription and over-the-counter medications.

So, what should Coach Baker do? Coach Baker is correct in suspecting that the swimmer is having an allergic reaction based on his history of a peanut allergy. The swimmer's signals of the rash and itching most likely indicate a moderate allergic reaction, not anaphylaxis (a severe reaction). There are no indications that the swimmer is having any difficulty breathing, confusion, or swelling of the face, throat or tongue. As such, epinephrine may not be indicated in this situation. However, Coach Baker should continue to monitor the swimmer for changes in his condition. And perhaps a call to the parents for additional guidance would be prudent. If the swimmer's condition changes and he develops trouble breathing, signals of shock or swelling of the face, tongue or throat, then Coach Baker should assist the swimmer in using the epinephrine auto-injector. In addition, someone on the bus should call 9-1-1 or the local emergency number. The bus should pull over and await the arrival of EMS.

Diabetes

The race has begun, but Coach Martin's swimmer Grace fails to start and just seems dazed on the block. The official calls Coach Martin over to check on Grace because he is not sure what is going on. As Coach Martin approaches her, Coach notices that Grace is a little pale and not acting like herself. Coach Martin asks "What's wrong?" Grace says, "I'm late for school and have to catch the bus." Just then Coach Martin remembers that Grace's medical release form says she is a diabetic and takes insulin. Should Coach Martin give Grace some sugar?

Diabetes is another health condition that can quickly lead to serious problems if not treated properly. A person who has diabetes lacks the ability to change sugar (or glucose) from food into energy. People with diabetes sometimes become ill because there is too much or too little sugar in their blood. For the body to function properly, there must be a balance of insulin and sugar. If this balance becomes upset, one of two diabetic emergency conditions can occur: hyperglycemia (too much sugar in the blood) or hypoglycemia (too little sugar in the blood).

Signals of a diabetic emergency include the following:

- Changes in the level of consciousness
- Changes in mood
- Rapid breathing and pulse
- Feeling or looking ill
- Dizziness and headache
- Confusion

If the person having a diabetic emergency is conscious and able to safely swallow fluids or food, he or she should be given sugar in solid form such as glucose paste or tablets, or sugar in liquid form, such as fruit juices, milk and non-diet soft drinks. An alternative is to give table sugar dissolved in a glass of water. All of these options have enough sugar to be effective if a person is suffering from too little sugar in his or her blood but will not harm someone who has too much sugar in their blood. See the Resources section of the course to watch a video segment on diabetic emergencies.



Of course, you must make sure that the person is fully conscious before giving sugar by mouth. If the person is unconscious or is losing consciousness, never give them food or drink. Call 9-1-1 or the local emergency number immediately. Also call 9-1-1 or the local emergency number if:

- The person is conscious but not able to swallow.
- The person does not feel better within 5 minutes after taking some form of sugar.
- There is no form of sugar immediately available.

Should Coach Martin give Grace some sugar? Yes, Coach Martin should give her sugar in some form. Although Grace is confused, she is awake, able to swallow, able to answer questions and follow simple commands. So Coach Martin should give Grace sugar in some form, such as clear fruit juices, milk, glucose tablets or paste or even water mixed with table sugar. Diet sodas should be avoided because they do not contain sugar. Using hard candies should be limited because they are a choking hazard. However, if that is the only source of sugar available, then they can be used.

Coach Martin should continue to monitor Grace closely and call 9-1-1 or the local emergency number if she does not improve within 5 to 15 minutes of taking the sugar. Coach Martin should also call 9-1-1 or the local emergency number if Grace is unable to swallow or becomes unconscious.

COMMON SWIMMING-RELATED INJURIES

A swimmer tells Coach DelPolito, "I'm having shoulder pain when I swim. It also hurts at night when I'm trying to sleep." Coach has worked with the swimmer on technique, suggesting more body roll in freestyle, but the swimmer says the pain persists. He gets out frequently to apply ice to the shoulder during practice. He wants to use a kickboard, but Coach DelPolito fears that extending the arm on a kickboard might aggravate the shoulder even more. Coach tells the swimmer to hit the showers. After practice, he talks to the parents and suggests that the swimmer see a doctor. The swimmer protests, "It's not that bad," but Coach thinks that continuing to train is counterproductive. Did Coach DelPolito do the right thing?

There are certain injuries that are more common in swimmers than in other athletes. As a swim coach, you need to know how to deal with these! Among those you are most likely to see are injuries to the shoulders, groin, neck and back.

Many times, pain during swimming is related to incorrect or poor technique (Figure 4-12). Poor body rotation, excessive or insufficient movement, misalignment of the body and even poor breathing technique can all cause painful injuries in a swimmer.

Figure 4-12



However, you should not assume that poor technique is the cause of a pain. After all, in some cases pain *forces* poor technique.

Injury and pain can also be due to the repeated stress placed on a body part. This type of injury occurs gradually over time. See *Overuse Injury.*



Overuse Injury

Overuse injury is as the name implies, an injury that occurs when repeated stress is placed on a body part. Unlike a fracture and concussion which are acute injuries, repetitive joint overuse injury occurs gradually over time resulting in inflammation, muscle strain and possibly, tissue damage. With continued use and subsequent stress on already inflamed tissues and joints, the area is unable to repair itself, resulting in even more trauma to the area.

In swimming, "swimmer's shoulder" or rotator cuff tendonitis is the most common type of overuse injury. The muscles and tendons of the shoulder joint become traumatized and inflamed. It may occur from an imbalance in the shoulder muscles as well as poor stroke form.

Overuse injuries are difficult to identify and diagnose. Often the athlete overlooks the pain, initially, because it doesn't interfere with his or her ability to function. But with continued use, a more severe injury can occur.

The majority of overuse injuries can be prevented. To help reduce the risk of overuse injury, watch for the following:

- Complaints of tingling, numbness or pain in a body area
- Reports of soreness or stiffness in the neck or spine
- Reports of popping or clicking sensations in a joint

In addition, actively work to prevent overuse injuries by:

- Encouraging appropriate non-swimming muscle strengthening and stretching exercises
- Gradually and progressively increasing yardage, intensity and duration to minimize the risk of overuse injury and provide adequate resting time
- Varying the day-to-day workouts
- Ensuring adequate time for warming up and warming down, including appropriate stretching exercises before and after the session
- Making sure swimmers drink plenty of fluids before, during and after workouts
- Urging athletes to report any serious aches and pains during or after workouts
- Reminding athletes that swimming through the pain or ignoring it will only lead to further injury

If you suspect an overuse injury, encourage the athlete to see a health care provider.

Another thing to keep in mind is that pain during swimming can be a result of outside factors, too. Common culprits include carrying a backpack incorrectly, bad posture while using a computer or consistently clamping the telephone between the ear and shoulder. If someone is complaining of pain, always discuss possible nonswimming causes with the injured swimmer and the parent or guardian, too.

The Shoulders

Shoulder function, including stability, proper motion and painless function is highly dependent on the coordinated working of many muscle groups. These include the muscles around the shoulder, referred to as the rotator cuff, those that control the scapula or shoulder blade, muscles in the upper and lower back, as well as abdominal and pelvic muscles. The repetitive overhead activity of the swimming stroke can result in fatigue of these muscles. This in turn can lead to distinct changes in the stability and function of the shoulder.

Poor techniques that lead to shoulder pain include the following:

- Dropping the elbow during the recovery phase of freestyle
- Inadequate body rotation
- An overly wide swinging recovery

The Groin

Groin pain and injury is most common in breaststrokers, who require a balance of flexibility and strength between their pelvic and thigh musculature, as well as a balance of lower abdominal strength. The thigh muscles originate off of the pelvic girdle, which is the center of core stability. A variety of muscles are constantly working against each other during the breaststroke kick. Flexibility is essential in the following muscles: quadriceps, hamstrings, adductors (inner thigh), abductors (outer thigh) and hip rotators. Often there is an imbalance between the strength of the quadriceps over the weaker hamstrings. The hamstrings get overloaded and strained, possibly leading to a groin injury. Preventing groin injuries is possible if the proper balance of flexibility among different muscle groups as well as a balance of flexibility and strength throughout the hip and pelvic muscles is maintained. Poor techniques that lead to groin pain include the following:

- An overly wide breaststroke kick
- And overly narrow breaststroke kick
- Excessive breaststroke swimming
- Excessive breaststroke kicking

The Neck and Back

The anatomy of the neck is very complex due to its function and great mobility. The bony part of the neck is known as the cervical spine and consists of seven vertebrae. The spinal cord runs through the vertebrae from the brain to the lower back with offshoots, known as spinal nerves, exiting between the vertebrae. These spinal nerves travel to the muscles, joints and skin of the hands, arms, shoulders, shoulder girdles, superficial muscles of the upper and lower back as well as the structures of the neck. Furthermore, there are many muscles in the neck, several of which span the neck and upper back. This means that pain, tingling, numbness or weakness in any of the areas mentioned above may originate in the neck.

Poor techniques that lead to neck and back pain include the following:

- Failure to maintain the body line of the neck and spine
- Looking ahead instead of down at the bottom of the pool during freestyle
- Insufficient body rotation
- Failing to tuck the chin during flip turns
- Excessive movement of the head and neck during breaststroke
- Untimely breathing during butterfly

Care

If you know or think a swimmer is experiencing *slight to moderate discomfort* during swimming, evaluate the person's stroke technique right away and modify it as needed. If there is still discomfort, the swimmer should discontinue swimming right away. A swimmer experiencing *severe pain* during swimming *must* be removed from the workout. There is just no reason to buy into the old adage, "no pain, no gain." In either case, remember, always notify the parent or guardian as soon as possible and encourage the parent to contact the swimmer's health care provider. In the case of severe pain, the health care provider may refer the swimmer to a sports medicine practitioner for an evaluation and diagnosis. With their permission, invite the sports medicine practitioner to a workout for on-site evaluation or discussion.

Did Coach DelPolito act appropriately? Coach DelPolito followed the recommended protocols for dealing with an injured swimmer. Initially, he attempted to work on the swimmer's technique but without any success. When the swimmer continued to report pain, Coach DelPolito removed the swimmer from practice and notified the parents, suggesting that the swimmer see a health care provider.

Prevention

A comprehensive program to develop strength, endurance, balance and flexibility of the muscles is the best way to prevent swimming injury and pain. You should have your swimmers exercise all of the muscle groups involved in the swimming motion for a well-rounded approach. **USA Swimming** has more information on preventing injuries.



FIRST AID CONSIDERATIONS FOR OPEN-WATER SWIMMING

Open-water swimming is a unique experience that simply cannot be duplicated in any pool setting. And with the rewards come a unique set of challenges and first aid considerations. Water temperature, clarity, depth and water and weather conditions can all differ widely from location to location—but also from one minute to the next in the same location. Because of these variations, your approach to first aid may vary too. Of course, the principles are the same, regardless of where the first aid is being given, whether in the open water or on a rescue water craft or rescue board. See the Resources section of the course for more information on open-water swimming.



First Aid Issues

First aid issues common in an open-water swimming environment include dehydration, hyperthermia and hypothermia. For each of these, prevention is the key. If an issue does arise, prompt action is necessary.

Figure 4-13



Depending on the type of aquatic environment, your swimmers could encounter certain marine life and suffer from a bite or sting (Figure 4-13). The stings of some forms of marine life are not only painful, but they also can make the victim feel sick, and in some parts of the world, can be fatal. The side effects of a sting from an aquatic creature can include allergic reactions that can cause breathing and heart problems, as well as paralysis and death.

If the sting occurs in the water, move the person to dry land as soon as possible. Emergency care is necessary if the victim has been stung by a lethal jellyfish, does not know what caused the sting, has a history of allergic reactions to stings from aquatic life, has been stung on the face or neck or starts to have difficulty breathing.

Basic care steps for jellyfish stings are to remove the person from the water, prevent further injection of poisonous material by deactivating or removing nematocysts (stingers) and control pain. There are some differences in specific care based on the region and the species of jellyfish:

- To deactivate the stingers/tentacles for most types of jellyfish in most waters in the United States, flush the injured part in vinegar as soon as possible for at least 30 seconds to offset the toxin. A baking soda slurry also may be used if vinegar is not available.
- For “bluebottle” jellyfish, also known as Portuguese man-of-war, which are found in tropical waters, flush with ocean water instead of vinegar. Vinegar triggers further injection of poisonous material. Do not rub the wound or apply fresh water, ammonia or rubbing alcohol because these substances may increase pain.
- Carefully remove any stingers/tentacles with gloved hands or a towel. When stingers are removed or deactivated, use hot-water immersion (as hot as can be tolerated) for at least 20 minutes or until the pain is relieved. If hot water is not available, dry hot packs or, as a second choice, dry cold packs also may be helpful in decreasing pain. Do not apply a pressure immobilization bandage.

Safety Precautions

If your team is participating in an open-water meet, the safety director should always inform participants of the types of marine life, such as jellyfish, that are present in the region. They should also give specific treatment recommendations and provide photographs of the marine life to aid in identification.

Other safety precautions that should be taken before an open-water event include a mandatory safety briefing for all swimmers. Here the swimmers are briefed on potential hazards and instructed on hand signals to lifeguards should they need rescue. In addition, lifeguards are trained in pre-agreed hand signals to summon assistance from rescue boats and other rescuers. Open-water facilities are also required to provide specific medical equipment. The minimum medical equipment includes items such as:

- Pocket face mask
- One rescue flotation device for each responder
- Masks, snorkel and swim fins
- Binoculars
- Radio and workable mobile phone
- First aid kit, including supplies for lacerations
- Cardiac defibrillator
- Asthma inhaler/bronchodilator
- Diphenydramine (Benedryl®)
- Benzodiazepine medication for seizure treatment
- Epinephrine auto-injector
- Intravenous fluids
- Intravenous equipment such as needles
- Oxygen and masks
- Glucose tablets

USA Swimming has additional information on getting started in open-water swimming and a safety checklist for athletes. Open Water Swimming Rules are available from **Federation Internationale De Natation (FINA)**.



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APPENDIX

REACHING ASSISTS

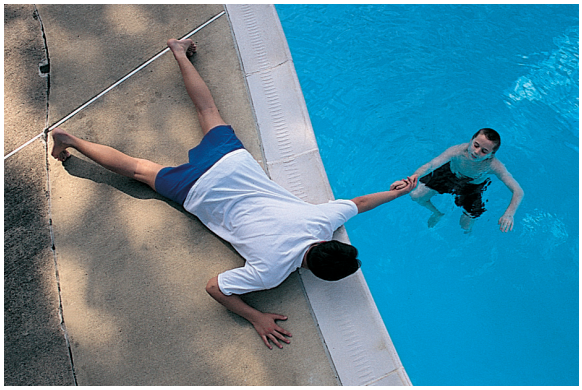
1 Reaching Assist with Equipment

- Brace yourself on the pool deck or pier surface.
- Extend the object to the victim.
- When the victim grasps the object, slowly and carefully pull him or her to safety.
  - Keep your body low and lean back to avoid being pulled into the water.



2 Reaching Assist without Equipment

- Brace yourself on the pool deck or pier surface.
- Reach with an arm and grasp the victim.
- Pull the victim to safety.



3 Reaching Assist without Equipment from a Position in the Water

- Hold onto a pool ladder, overflow trough (gutter), piling or another secure object with one hand.
- Extend a free hand or one leg to the victim.
  - Do not let go of the secure object or swim out into the water.
- Pull the victim to safety.



THROWING ASSIST

- Hold the coil of the line in the open palm of nonthrowing hand and grasp the side of the object with throwing hand. If the line has a wrist loop, place the hand that will hold the line through it. If there is not a wrist loop, step on the nonthrowing end of the line.
- Hold the object vertically, step back with your leg on the throwing side, swing the object backwards and then forward for an underhand toss.



- Aim the throw so that the object lands just beyond the victim with the line lying on the victim's shoulder. Tell the victim to grab the object. If there is a crosswind or current, throw upwind or up current of the victim.



- After the victim has a firm grasp on the object or line, drop the remaining coil, if any, and pull the victim to safety. Keep your body low and lean back to avoid being pulled into the water. Reassure the victim.
- Slowly pull the victim to safety by reaching out with one hand and grasping the line with your thumb inward. Pull the line in to your side with that hand while reaching out with the other. Continue the alternate pulling and reaching action until the victim is at the side or is able to stand in shallow water.



TWO-PERSON REMOVAL FROM THE WATER USING A BACKBOARD

- The primary rescuer brings the victim to the side and turns him or her to face the wall. Another rescuer brings a backboard with the head immobilizer and the straps removed, if possible.
- The assisting rescuer on land crosses his or her own hands to grab the victim's wrists and pulls the victim up slightly to keep the head above the water and away from the wall. The primary rescuer supports the victim's head so that the head does not fall forward.





- The primary rescuer ensures that the victim's face is out of the water and then climbs out of the water, removes the rescue tube and gets the backboard. The primary rescuer guides the backboard, foot-end first, down into the water along the wall next to the victim.





- The assisting rescuer immediately begins to turn the victim onto the backboard. Each rescuer then quickly grasps one of the victim's wrists and one of the handholds of the backboard.





- When the primary rescuer gives the signal, both rescuers pull the backboard and victim onto land, resting the underside of the board against the edge. (Remember to lift with the legs and not with the back.) The rescuers step backward and then carefully lower the backboard onto the ground. If other rescuers or additional help is available, they can provide assistance by pulling or pushing the backboard.





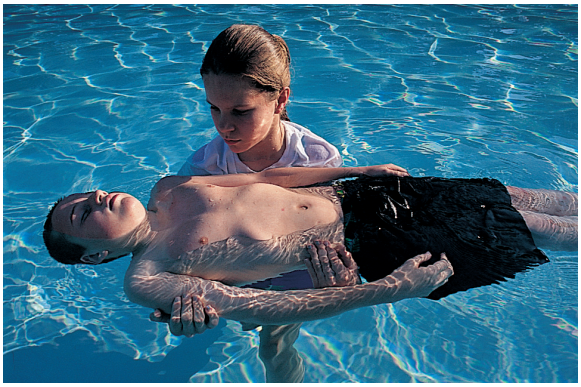
- Rescuers provide immediate and appropriate care based on the victim's condition. Rescuers continue care until emergency medical services (EMS) personnel arrive and assume control over the victim's care.

TIPS:

- *It may be easier to submerge the board initially if the board is angled, foot-end first, toward the wall.*
- *As soon as the board is submerged, turn the victim onto the board then allow the board to float up beneath the victim.*
- *Once the board is submerged, the rescuer can help to stabilize the board against the wall, placing his or her foot against the backboard, if necessary.*

HIP AND SHOULDER SUPPORT

- Approach the victim from the side and lower yourself to about shoulder depth.
- Slide one arm under the victim's shoulders and the other arm under the hips. Hold the victim's body horizontally, keeping the victim's face out of the water.
- Do not lift the victim. Hold him or her still in the water until help arrives.



HEAD SPLINT

For a Face-Up Victim

- Approach the victim's head from behind or stand behind the victim's head.
  - In shallow water, lower your body so that the water level is at your neck.



- Grasp the victim's arms midway between his or her shoulder and elbow. Grasp the victim's right arm with your right hand and the victim's left arm with your left hand. Gently move the victim's arms up alongside the head. Position yourself to the victim's side while trapping the victim's head with his or her arms.
- Slowly and carefully squeeze the victim's arms against his or her head to help hold the head in line with the body. Do not move the victim any more than necessary.



- Position the victim's head close to the crook of your arm, with the head in line with the body.
- Check for consciousness and breathing.
  - If the victim is not breathing, immediately remove the victim from the water using a technique, such as the two-person-removal-from-the-water using a backboard, and provide resuscitative care. Do not delay removal from the water by strapping the victim in or using the head immoblizer device.
  - If the victim is breathing, hold the victim with the head in line with the body and move toward safety until the backboard arrives.



- Continuously monitor for consciousness and breathing. If at any time the victim stops breathing, immediately remove the victim from the water and then provide appropriate care.

For a Face-Down Victim

- Approach the victim from the side.
- Grasp the victim's arms midway between the shoulder and elbow. Grasp the victim's right arm with your right hand and the victim's left arm with your left hand. Gently move the victim's arms up alongside the head.
- Squeeze the victim's arms against his or her head to help hold the head in line with the body.



- Glide the victim slowly forward.
  - In shallow water, lower your body to shoulder depth before gliding the victim forward.
  - Continue moving slowly and turn the victim until he or she is face-up. To do this, push the victim's arm that is closest to you under the water while pulling the victim's other arm across the surface toward you.



- Position the victim's head in the crook of your arm, with the head in line with the body.
- Check for consciousness and breathing.
  - If the victim is not breathing, immediately remove the victim from the water using a technique, such as the two-person-removal-from-the-water using a backboard, and provide resuscitative care. Do not delay removal from the water by strapping the victim in or using the head immobilizer device.
  - If the victim is breathing, hold the victim with the head in line with the body and move toward safety until the backboard arrives. In deep water, move the victim to shallow water, if possible.



- Continuously monitor for consciousness and breathing. If at any time the victim stops breathing, immediately remove the victim from the water and then provide appropriate care.

Glossary

Bloodborne pathogens: bacteria or viruses present in blood and body fluids capable of causing disease in humans

Bullying: the aggressive use of power to control or harm someone in a weaker position

Circle swimming: a technique that allows multiple swimmers to swim in the same lane simultaneously, swimming counterclockwise in the lane with approximately 5 seconds between swimmers

Emergency action plan (EAP): a written plan detailing how coaches and facility staff are to respond to a specific type of emergency

Grooming behavior: behavior in which an abuser targets a vulnerable child, forms a relationship with him or her as friends or equals and begins to desensitize the child to touch

Hyperventilation: rapid deep breathing; dangerous technique in which swimmers try to swim long distances underwater by taking a series of rapid breaths in succession and forcefully exhaling in order to increase the amount of oxygen that they breathe

Local Swimming Committees (LSCs): regional governing bodies

Long-term inhaler: inhaled medication used to prevent and/or avoid an asthma attack

Quick-relief inhaler: inhaled medication used to stop an acute asthma attack

Repeat: a training swim of a certain distance repeated a prescribed number of times with either a set rest interval or to be completed in a prescribed time which includes the swim and rest periods

Send-off interval: the prescribed time between swimmers' departure from the wall

Tornado warning: warning issued by the National Weather Service notifying that a tornado has been sighted

Tornado watch: warning issued by the National Weather Service notifying that tornados are possible

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