

Kentucky Injury Prevention and Research Center
Bona fide agent for Kentucky Department for Public Health
2365 Harrodsburg Rd., Ste. B340, Lexington, KY 40504 • 859 257-5839

REPORT#: 23KY115

REPORT DATE: October 2, 2024

INCIDENT HIGHLIGHTS



DATE:

December 18, 2023



TIME:

11:11 a.m.



VICTIM:

23-year-old hotel
employee



INDUSTRY/NAICS CODE:

Hotels (except Casino
Hotels) and Motels/721110



EMPLOYER:

Hotel



SAFETY & TRAINING:

Relevant safety training
was not available

SCENE:

Indoor hotel swimming
pool



LOCATION:

Kentucky



EVENT TYPE:

Drowning



Hotel Employee Drowns in Swimming Pool

SUMMARY

At 11:11 a.m. on December 18, 2023, a 23-year-old hotel worker was killed when he drowned cleaning out the hotel pool. Video footage of the incident indicated that he was working alone and had entered the pool to remove submerged trash, even though equipment was available nearby that would have allowed him to do the work without entering the pool. When he entered the deep end of the pool (approximately 7 feet deep) he attempted to dive down to retrieve trash but then could not remain afloat or reach the side of the pool. He struggled but could not self-rescue...

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CONTRIBUTING FACTORS

Key contributing factors identified in this investigation include:

- *Lack of an aquatics safety plan*
- *Lack of education and training*
- *Lack of lifesaving training*
- *Lack of pool-related safe work practices*
- *Working alone in water*
- *Lack of available personal flotation device*

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RECOMMENDATIONS

Kentucky investigators concluded that, to help prevent similar occurrences, employers should:

- Institute an aquatics safety plan,
- Prohibit employees from working in or near water until first providing appropriate education and training,
- Provide training in first aid and cardiopulmonary resuscitation,
- Establish pool safety-related work practices,
- Establish procedures to monitor workers working alone,
- Provide and ensure the use of personal flotation devices.

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KENTUCKY

State **FACE** Program

Fatality Assessment & Control Evaluation

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Fatality Assessment and Control Evaluation Program

This case report was developed to draw the attention of employers and employees to a serious safety hazard and is based on preliminary data only. This publication does not represent final determinations regarding the nature of the incident, cause of the injury, or fault of employer, employee, or any party involved.

This case report was developed by the Kentucky Fatality Assessment and Control Evaluation (FACE) Program. Kentucky FACE is a National Institute for Occupational Safety and Health-funded occupational fatality surveillance program with the goal of preventing fatal work injuries by studying the worker, the work environment, and the role of management, engineering, and behavioral changes in preventing future injuries. The FACE program is located in the Kentucky Injury Prevention and Research Center (KIPRC). KIPRC is a bona fide agent for the Kentucky Department for Public Health.

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INTRODUCTION

At 11:11 a.m. on December 18, 2023, a 23-year-old hotel worker died after he drowned while cleaning out the hotel pool. Video footage of the incident indicated that he was working alone and had entered the pool to remove submerged trash, even though equipment was available nearby that would have allowed him to do the work without entering the pool. When he entered the deep end of the pool (approximately 7 feet deep) he attempted to dive down to retrieve trash but then could not remain afloat or reach the side of the pool. He struggled but could not self-rescue and sank to the bottom. Shortly thereafter, he was discovered by a coworker who used a rescue pole with a shepherd's hook to pull him from the pool. The coworker attempted to revive the drowned employee as did emergency rescue services. He was taken to a nearby hospital but was pronounced dead by attending physicians on December 21, 2023.

EMPLOYER

The employer had owned and operated the hotel where the incident occurred for more than eight years, although the hotel itself had been in operation for over 40 years prior to the incident.

WRITTEN SAFETY PROGRAMS and TRAINING

The employer declined to discuss the hotel's written safety programs or safety-related training beyond stating that the deceased employee told him that he knew how to swim. Interviews with other employees or next of kin were not possible.

WORKER INFORMATION

The decedent was a 23-year-old Asian male from India. He had been employed by the hotel for approximately three months. He had recently completed a graduate degree in information technology from a nearby university. He was reportedly fluent in writing and speaking English. He worked primarily as a front desk clerk, but he performed a variety of other tasks as needed, including ensuring that the pool area was neat and tidy.

EQUIPMENT

The pool was equipped with entry steps and a ladder in the shallow end and another ladder in the deep end. Water safety equipment including a ring buoy with throwline, rescue pole, and backboard were located in the pool area. Pool maintenance equipment such as poles and skimmer bag attachment were also available in the pool area. Equipment is indicated by a red arrow in photo 1.

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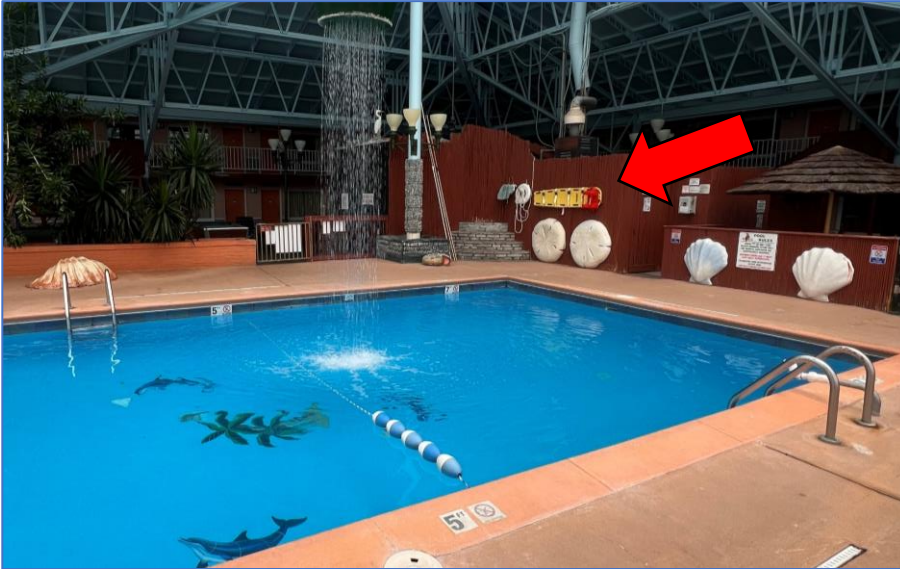


Photo 1. Equipment in pool area. Photo property of KYFACE program.

INCIDENT SCENE

The scene was an indoor pool housed in a large atrium that contained mature trees and plants. It included billiards and shuffleboard areas and was bordered on the northeast and southeast sides by guest rooms on two levels. The northwest and southwest sides of the atrium and portions of the ceiling were constructed of glass, as shown in photos 2 and 3. The pool area was located adjacent to the hotel's front desk area, accessed through a short hallway separated by glass doors. The pool area was monitored by a security camera that could be monitored by employees at the front desk.

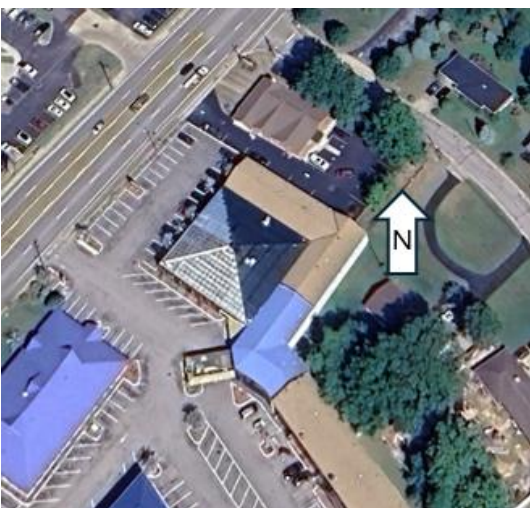


Photo 2. Hotel atrium aerial view. Photo obtained from Google Earth.

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Photo 3. Northwest view of pool area. Photo property of KYFACE program.

WEATHER

Weather was not considered to be a factor because the incident occurred indoors.

INVESTIGATION

At approximately 11:11 a.m., December 18, 2023, a 23-year-old hotel worker drowned in the hotel's indoor swimming pool. The deceased worker was removing tree leaves and other trash from the pool. The worker was dressed in shorts and a short-sleeved shirt but was not wearing a personal flotation device (PFD). A PFD was not available in the pool area. Pool maintenance equipment (e.g., pole and skimmer bag) that would have allowed the worker to clean trash from the pool without entering it was readily available, but it is not known why the employee did not use it.

While there were no eyewitnesses, the employer's security camera system recorded most of the incident. KYFACE was able to obtain the video from the local emergency response agency. The video began at 11:04 a.m. with the worker having already entered the shallow end of the pool, at a depth of approximately 3 feet. Pool depths were indicated by signage on the pool deck and inside pool walls and are visible in photo 4. It should be noted that the security camera footage and photos taken by KYFACE show that the buoys of the pool's rope and float line were not evenly spaced. Buoys should be kept secured so that they do not slide or bunch (Texas, 2024).

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Photo 4. Video capture of pool depth signage. Video courtesy of local EMS agency.

At a depth of about 3 feet, the water was just above the worker's waist. He was able to remove trash from the pool floor by picking submerged items up between his toes and then placing them on the poolside. At 11:05 a.m., he attempted to swim underwater to retrieve more trash. Although he went downward hands-first, he was not able to swim to the bottom and came back up. The quality of his movements indicated that he was not skilled at swimming. Still on the shallow side of a buoyed pool safety rope (water depth of 5 feet), he was able to again retrieve trash from the bottom using his feet. Trash items are indicated by red arrows in photo 5.

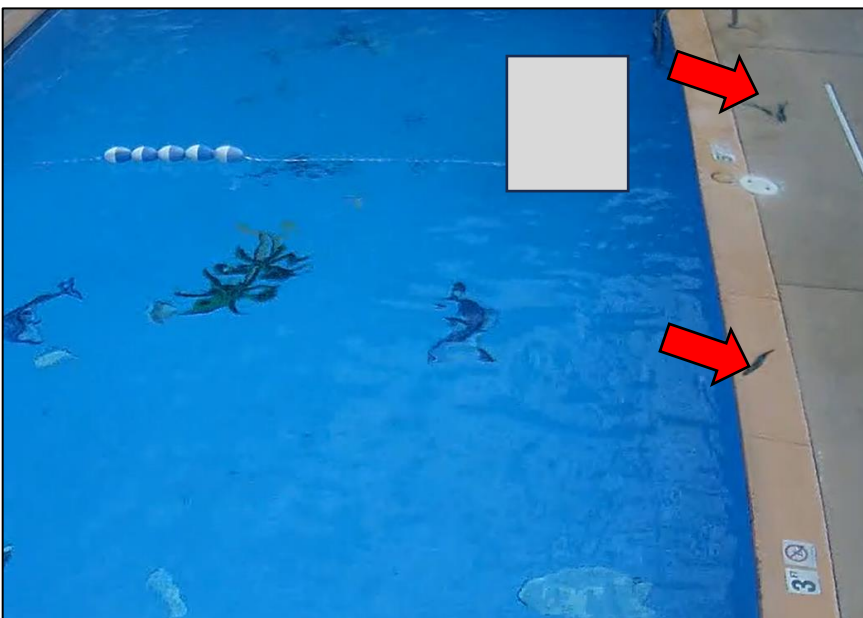


Photo 5. Video capture of employee removing trash from pool. Video courtesy of local EMS agency.

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Moving to the pool safety rope, the worker was nearly submerged, so he held onto the edge of the pool. The coroner's report indicated that the worker was 66 inches in height. He passed under the pool safety rope, returned to the edge of the pool, and then managed to swim down to retrieve another piece of trash located on the far side of the rope. At this point, he was able to stand on the pool bottom and push toward the pool side with his head just above the waterline. Holding onto the side, he appeared to be looking at other trash located in the center of the pool, and he attempted to swim toward it but returned to the edge of the pool quickly.

At 11:08 a.m., the worker then climbed out of the pool near the 5 foot depth mark and walked to the deep end of the pool, indicated to be 7 feet deep. At 11:09 a.m., he re-entered the pool at the southern corner and moved to the center of the deep end by holding on to the poolside. The security camera video footage suggests that he was looking at additional trash and he pushed himself down to the bottom to retrieve it. The worker then experienced trouble returning to the edge of the pool, which appeared to be just out of his reach. He struggled to remain afloat, submerging and coming to the surface several times. He submerged for the last time and appeared to lose consciousness at approximately 11:11 a.m., sinking to the bottom in an area indicated by a red "X" in diagram 1.

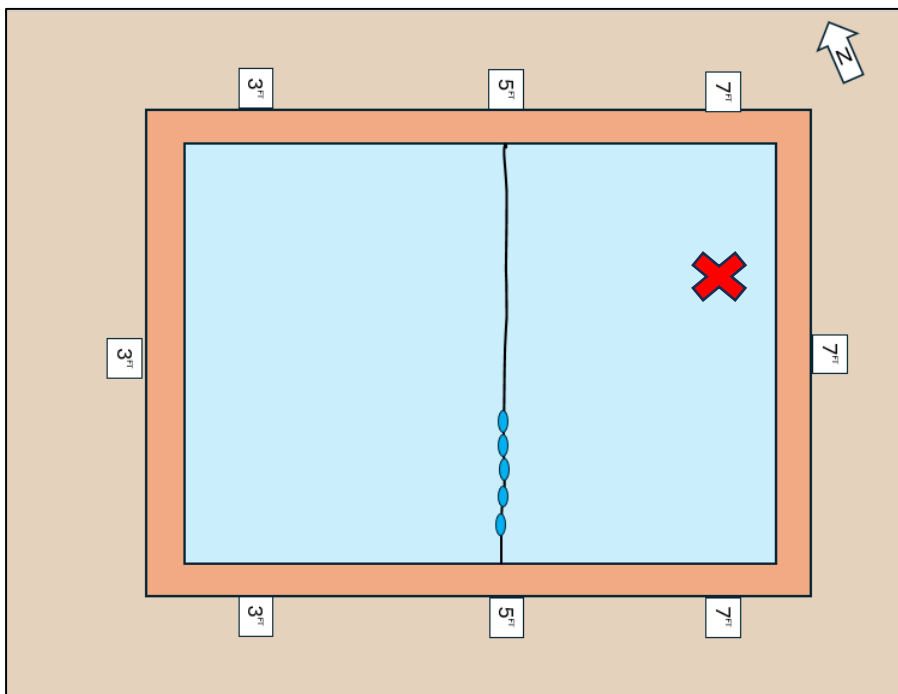


Diagram 1. Pool area.

A coworker entered the pool area at 11:17 a.m. and attempted to rescue the submerged employee using a rescue pole equipped with a shepherd's hook. The coworker pushed the worker along the bottom of the pool to the southern side of the pool, where he was able to pull him up with the shepherd's hook and then grasp him by hand. The coworker had difficulty getting the deceased worker completely out of the pool, with the worker's head going back under water. He was able to get the worker completely out of the pool at 11:19 a.m. The coworker appeared to try to revive the drowned worker, but this did not include first aid for drowning. Emergency rescue services were called at 11:19 a.m. and they arrived at 11:25 a.m. and began lifesaving efforts. The employee was transported to a nearby hospital where he was

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pronounced dead by attending physicians. The post-mortem toxicology report indicated negative results for ethyl alcohol and a screen of 40 drugs.

A manager at the hotel interviewed by KYFACE indicated that pool cleanup was part of the deceased worker's regular duties. It was stated that there was no reason for the employee to enter the pool as a pole and skimmer bag were provided in the pool area for pool clean up and that the deceased worker told him that he knew how to swim. KYFACE could not reach next of kin or others who might have been able to provide information on the deceased employee's ability to swim. The employer would not provide KYFACE with further details relating to the incident, deceased employee, its written safety programs, or safety training provided to workers.

CAUSE OF DEATH

According to the attending coroner's report, the cause of death was anoxic encephalopathy (lack of oxygen to the brain) due to drowning.

CONTRIBUTING FACTORS

Occupational injuries and fatalities are often the result of one or more contributing factors or key events in a larger sequence of events that ultimately result in the injury or fatality. Kentucky FACE has identified the following unrecognized hazards as key contributing factors in this incident:

- *Lack of an aquatics safety plan,*
- *Lack of education and training,*
- *Lack of basic lifesaving training,*
- *Lack of pool-related safe work practices,*
- *Working alone in water,*
- *Lack of available personal flotation device.*

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers who have swimming pools should institute an Aquatics Safety Plan.

Discussion: Employers should implement an Aquatics Safety Plan that follows Section 6 of the *Model Aquatic Health Code*, issued by the Centers for Disease Control and Prevention ([CDC, 2023](#)) for their workers who work in or near water. Code requirements include the completion of health and safety coursework for drowning prevention, surveillance and supervision, and an emergency action plan for drownings.

Recommendation #2: Employers should prohibit employees from working in or near water until they have been provided water safety education and training.

Discussion: Data from the CDC indicate that 42,589 fatal drownings among adults occurred in the United States between 2010 and 2022 due to unintentional causes (CDC, 2024). Employers should assess workers' understanding of the hazards associated with working around water and their level of water safety skills through a formal workplace job hazard analysis (JHA). The Occupational Safety and Health Administration ([OSHA, 2002](#)) defines a JHA as a technique that focuses on job tasks to identify and control hazards before exposure occurs. OSHA's guidance document for conducting JHAs is found here: [Job Hazard Analysis](#). Where water hazards exist, employers should provide appropriate education and training for water safety. Water Safety USA ([2024](#)) provides best practices for learn-to-swim programs and recommends providers such as the United States Swim School Association, Red Cross, YMCA of the USA, and Learn-to-Swim.

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Recommendation #3: Employers should provide employees with training in first aid and cardiopulmonary resuscitation

Discussion: In this incident, a coworker rescued the drowned worker from the pool, but did not provide first aid/ cardiopulmonary resuscitation (CPR) for drowning. Had first aid/CPR been effectively provided, it may have saved the drowned worker. Chest compressions and rescue breathing have been shown to be effective in reducing the likelihood of death by drowning (National Drowning Prevention Alliance, 2024).

Recommendation #4: Employers who have a swimming pool should establish a safe work practice that directs employees to perform work tasks without entering the pool.

Discussion: Safe work practices are a form of administrative hazard control. The National Institute for Occupational Safety and Health ([NIOSH, 2023](#)) notes that, “Administrative controls establish work practices that reduce the duration, frequency, or intensity of exposure to hazards,” by methods such as limiting access to hazardous areas. A safe work practice that directs employees to clean the pool without entering, such as using a pole with skimmer bag, similar to the work practice shown in photo 6, could be implemented.



Photo 6. Example of non-entry. Photo courtesy of Russ Allison Loar.

Recommendation #5: Employers should establish procedures to closely monitor workers working alone in or near water.

Discussion: A person is considered alone at work when they are on their own, when they cannot be seen or heard by another person. Although a video camera system existed for the pool area, it was not monitored closely enough to prevent the fatality. Direct observation would provide the quickest means to detect when an employee is at risk of drowning and to provide effective emergency rescue. When remote observation is used to monitor workers working

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alone, whether by video or audio transmission, procedures should be used to ensure that constant monitoring is conducted.

Recommendation #6: Employers should provide PFDs, train employees on how to properly wear and use PFDs, and ensure that workers wear them when working in or near water.

Discussion: A PFD was not available in the pool area. A PFD that is **approved** by the U.S. Coast Guard and complies with the most recent version of the Code of Federal Regulations for life preservers ([2014](#)) should be provided to and **worn** by employees working on or near water where the danger of drowning exists. Training on wearing and using PFDs should be provided prior to assigning employees work tasks in or near water. In this incident, if the victim had been wearing a PFD, he may have remained buoyant for rescue. In this case, other pool equipment was easily accessible in the pool area. A PFD should have also been located there. It is extremely important that the PFD selected is Coast Guard approved, in good and serviceable condition, and the appropriate size for the intended user to ensure that the wearer's head is kept above water and keeps the user in a position where it is easier to breathe. NIOSH Department of Health and Human Services (DHHS) Publication Number 2013-131: PFDs That Work ([2013](#)) describes personal flotation device research performed with commercial fishermen to evaluate both inflatable and foam-based PFDs.

DISCLAIMER

Mention of any company or product does not constitute endorsement by Kentucky FACE and NIOSH. In addition, citations to websites external to Kentucky FACE and NIOSH do not constitute NIOSH endorsement of the sponsoring organizations or their programs or products. Furthermore, Kentucky FACE and NIOSH are not responsible for the content of these websites. All web addresses referenced in this document were accessible as of the publication date.

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ADDITIONAL INFORMATION

Centers for Disease Control and Prevention. (2024). [Drowning Prevention](#)

United States Coast Guard. (2024). [PFD Selection, Use, Wear & Care](#)

INVESTIGATOR INFORMATION

This investigation was conducted and the report prepared by Dr. David Stumbo, OHST, CSP.

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