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2008–2012 Reported Circulation/Suction Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs, 2013 Report

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Executive Summary

This report characterizes information on circulation entrapment incidents associated with pools, spas,¹ and whirlpool bathtubs that were reported to the U.S. Consumer Product Safety Commission (CPSC) staff. A “circulation entrapment” is defined as an entrapment involving the water circulation system of a product. A multidisciplinary team of CPSC staff collaboratively developed this definition and determined the types of products that are of interest regarding circulation entrapments.

From 2008 through 2012, CPSC staff is aware of 39 victims of circulation entrapments. Highlighted findings include:

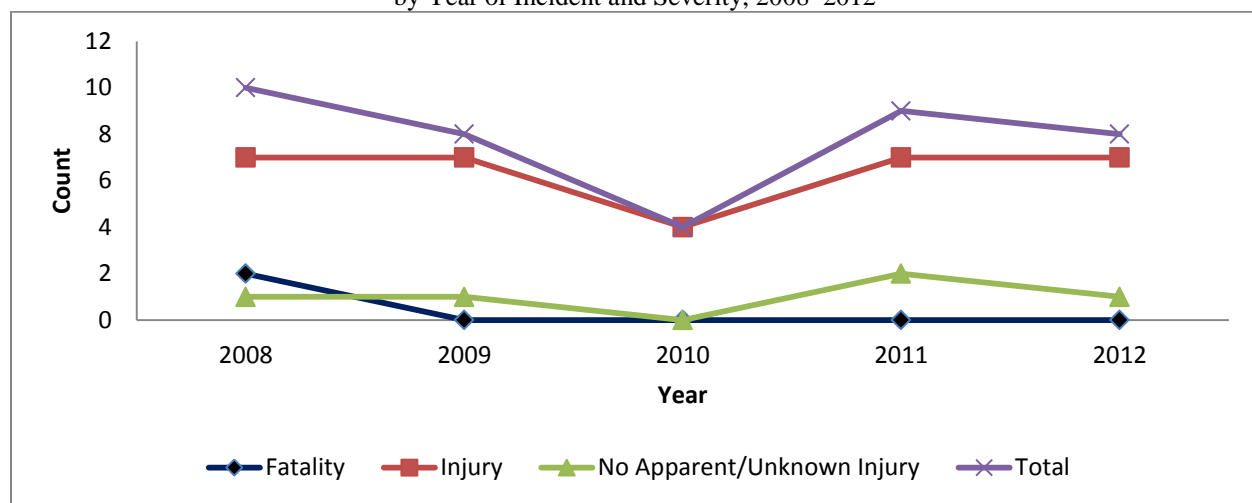
- Victims
 - Fatality (2 victims, 5 percent)
 - both fatalities were children, ages 6 and 14 years, and both occurred in 2008
 - Injury (32 victims, 82 percent)
 - 24 were children, ages 2 to 15 years
 - 7 were adults, ages 21 to 49 years
 - 1 injury report did not record the victim’s age
 - No injury (5 victims, 13 percent)
 - 3 were children, ages 5 to 13 years
 - 1 was an adult, age 50 years
 - 1 incident report did not record the victim’s age
 - Majority of the entrapments (29 victims, 74 percent) involved individuals younger than 16 years of age
 - Majority of the victims were females (30 victims, 77 percent)
- Product
 - 46 percent (18 victims) of the incidents were associated with a pool
 - 33 percent (13 victims) were associated with a spa
 - 21 percent (8 victims) were associated with a whirlpool bathtub
- Location
 - 64 percent (25 victims) of the incidents occurred in public settings
 - 31 percent (12 victims) occurred in residential settings
 - 5 percent (2 victims) occurred in an unknown location
- Entrapment Type
 - 33 percent (13 victims) were body entrapments
 - 31 percent (12 victims) were limb entrapments
 - 15 percent (6 victims) were mechanical entrapments
 - 13 percent (5 victims) were hair entrapments
 - 8 percent (3 victims) were evisceration/disembowelment entrapments
- Hazard Scenario
 - 38 percent (15 victims) were trapped by suction
 - 33 percent (13 victims) involved missing or removed outlet covers
 - 18 percent (7 victims) were categorized as caught on an outlet cover
 - 8 percent (3 victims) did not have sufficient details in the source document to classify the hazard scenario
 - 3 percent (1 victim) had a known scenario that did not fit into the defined scenarios

¹ The term “spa” is used to refer to spas and hot tubs.

Circulation Entrapment

There were 36 reports (39 victims) concerning circulation entrapments for the period 2008 through 2012. Of the 36 reports, three reports each involved two victims. Appendix A gives the methodology for data extraction and updating the database and Appendix B gives a summary of the 36 reports. For this time period, there were 2 fatalities² (both in pools), 32 injuries (14 pool, 11 spa, 7 whirlpool bathtub), and 5 no apparent injury or unknown injury incidents (2 pool, 2 spa, 1 whirlpool bathtub). Both fatalities occurred in 2008. Figure 1 displays the yearly counts of reported victims based on severity (fatality, injury, and no apparent/unknown injury).

Figure 1
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Year of Incident and Severity, 2008–2012



Source: CPSC databases, including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths), and INDP (In-Depth Investigations). Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

Of the 39 victims, 18 (46 percent) were associated with incidents (or entrapments) in pools, 13 (33 percent) were associated with spas, and 8 (21 percent) were associated with whirlpool bathtubs. Table 1 shows these counts.

Table 1
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Year of Incident and Product Category, 2008–2012

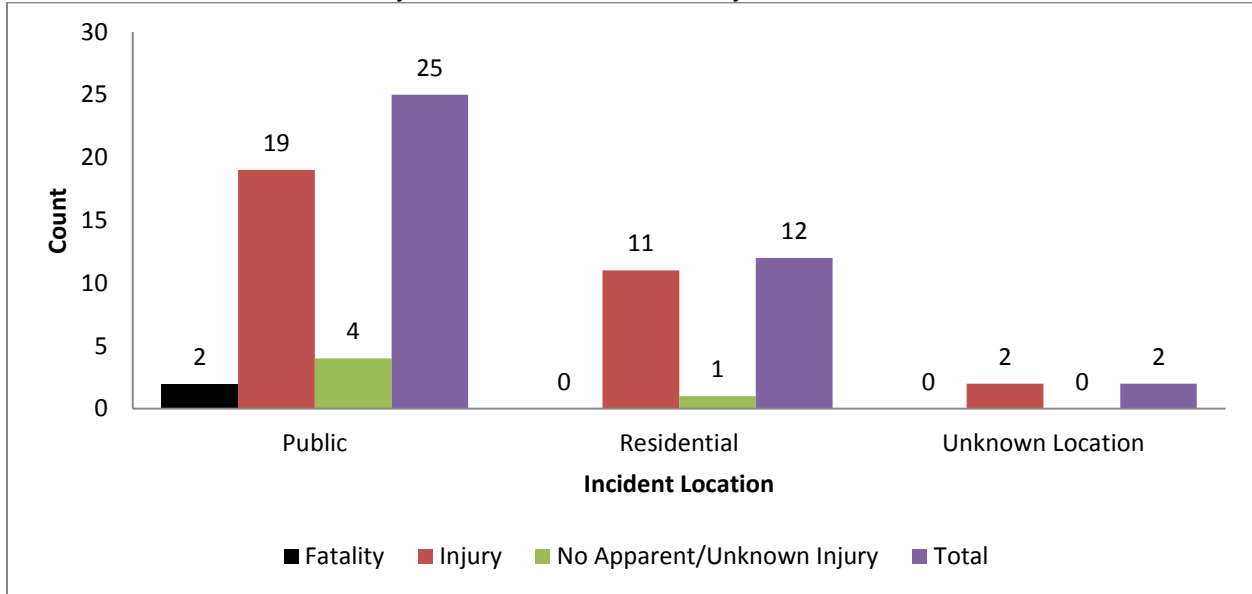
| Year | Pool | Spa | Whirlpool Bathtub | Row Total |
|---------------------|------|-----|-------------------|-----------|
| 2012 | 4 | 2 | 2 | 8 |
| 2011 | 3 | 4 | 2 | 9 |
| 2010 | 1 | 2 | 1 | 4 |
| 2009 | 4 | 2 | 2 | 8 |
| 2008 | 6 | 3 | 1 | 10 |
| Column Total | 18 | 13 | 8 | 39 |

Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

² One of the fatal incidents occurred in 2007, but the victim died in 2008. This incident is included in the 2008-2012 count.

The majority of the incidents (25 victims, 64 percent) occurred in public locations. Figure 2 presents the frequency of reported victims by location and severity.

Figure 2
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Incident Location and Severity, 2008–2012



Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

Of the 18 pool victims, most (83 percent) were in public pools. The locations of the spa and whirlpool bathtub incidents were more evenly distributed. Table 2 gives the counts by incident location and product category.

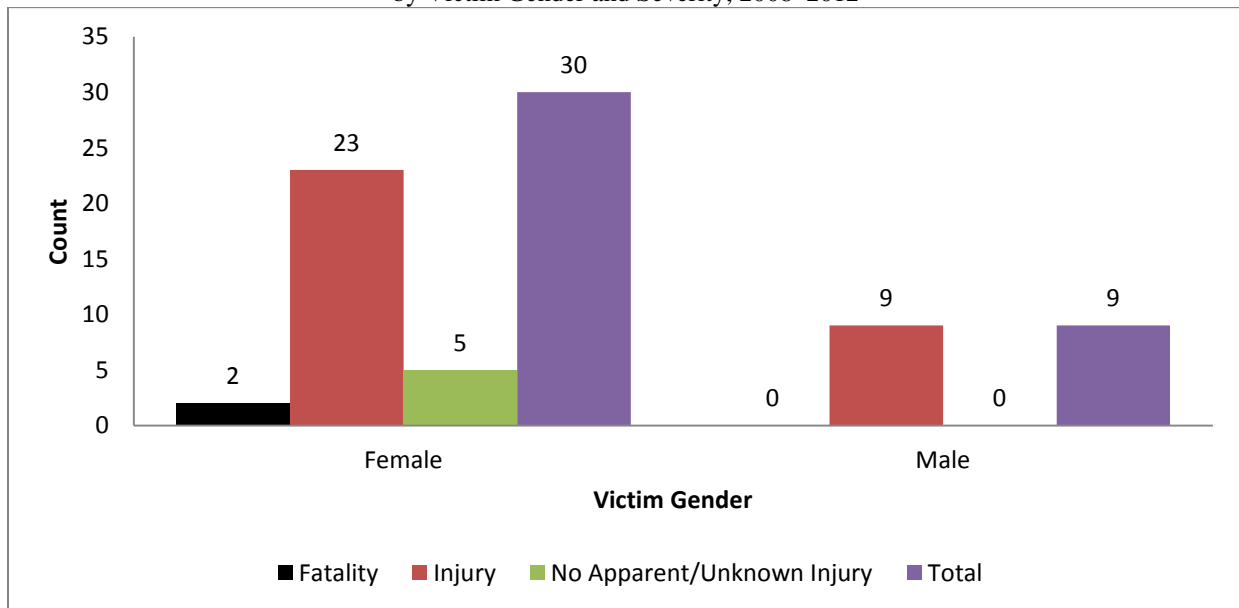
Table 2
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Incident Location and Product Category, 2008–2012

| Location | Pool | Spa | Whirlpool Bathtub | Row Total |
|--------------|------|-----|-------------------|-----------|
| Public | 15 | 7 | 3 | 25 |
| Residential | 3 | 5 | 4 | 12 |
| Unknown | - | 1 | 1 | 2 |
| Column Total | 18 | 13 | 8 | 39 |

Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

More females (30 victims, 77 percent) were involved in these incidents compared to males (9 victims, 23 percent). Figure 3 displays circulation entrapment counts for reported entrapments by gender and severity.

Figure 3
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Victim Gender and Severity, 2008–2012



Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

Most of the victims (67 percent for pool, 77 percent for spa, 100 percent for whirlpool bathtub) for each product category were female. Table 3 illustrates these counts.

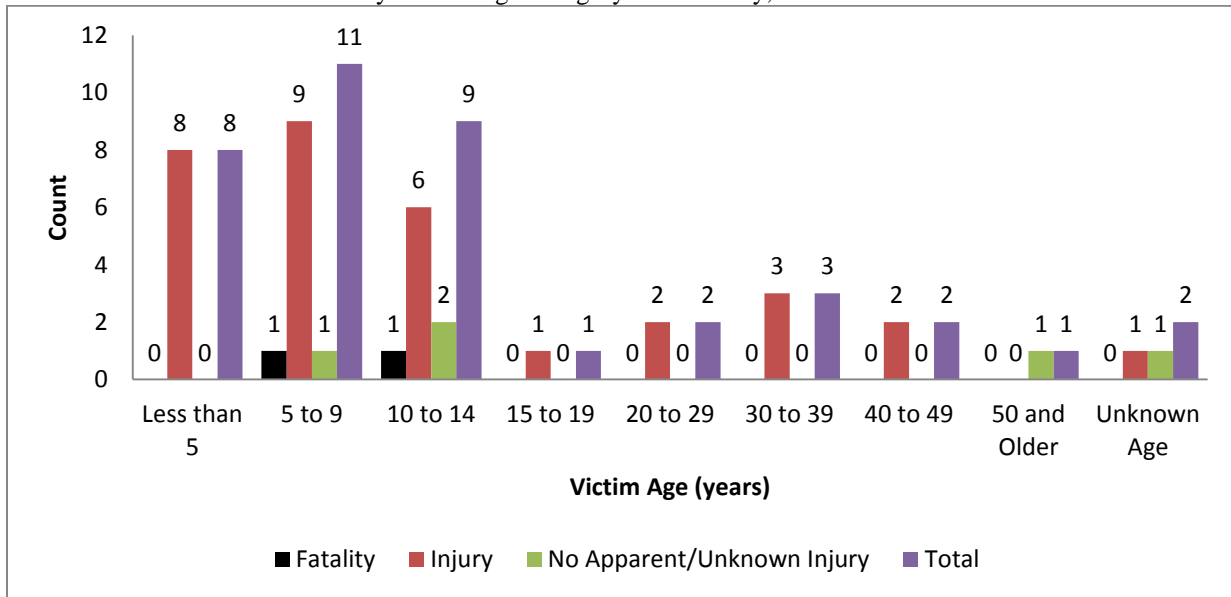
Table 3
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Victim Gender and Product Category, 2008–2012

| Gender | Pool | Spa | Whirlpool Bathtub | Row Total |
|--------------|------|-----|-------------------|-----------|
| Female | 12 | 10 | 8 | 30 |
| Male | 6 | 3 | - | 9 |
| Column Total | 18 | 13 | 8 | 39 |

Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

Figure 4 gives the counts of reported victims by victim age category and severity. Children in the 5- to 9-year-old category have the highest frequency (11 victims, 28 percent) of circulation entrapments. This is followed by the 10- to 14-year-old (9 victims, 23 percent) and younger than 5-year-old (8 victims, 21 percent) categories. Children 14 years of age or younger were involved in 28 (72 percent) of the reported circulation entrapments.

Figure 4
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Victim Age Category and Severity, 2008–2012



Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

More children 14 years of age or younger were involved in entrapments associated with pools and spas (89 percent for pools, 69 percent for spas) compared to whirlpool bathtubs (38 percent). Table 4 gives these counts.

Table 4
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Victim Age Category and Product Category, 2008–2012

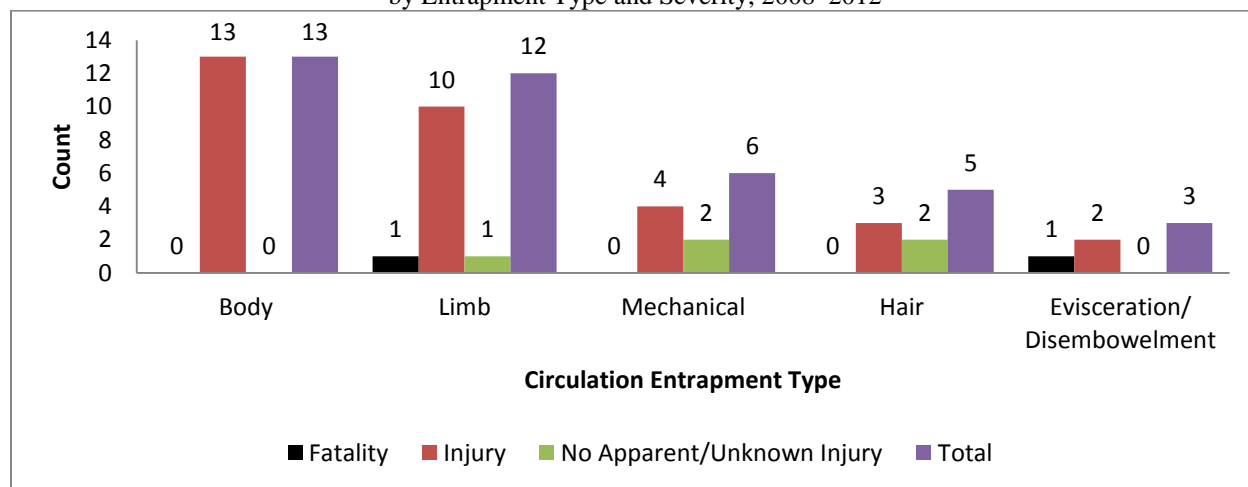
| Victim Age Category (years) | Pool | Spa | Whirlpool Bathtub | Row Total |
|-----------------------------|------|-----|-------------------|-----------|
| Less than 5 | 6 | 2 | - | 8 |
| 5–9 | 7 | 1 | 3 | 11 |
| 10–14 | 3 | 6 | - | 9 |
| 15–19 | - | 1 | - | 1 |
| 20–29 | - | 2 | - | 2 |
| 30–39 | 1 | - | 2 | 3 |
| 40–49 | - | - | 2 | 2 |
| 50 and Older | - | - | 1 | 1 |
| Unknown Age | 1 | 1 | - | 2 |
| Column Total | 18 | 13 | 8 | 39 |

Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

Using definitions developed by the Association of Pool and Spa Professionals (APSP), there are five types of circulation entrapment: (1) body, (2) limb, (3) evisceration/disembowelment, (4) hair, and (5) mechanical.³ “Limb entrapment” happens when a limb is sucked or inserted into an open sump or pipe. If only a limb was involved in the entrapment, then the incident was coded as “limb entrapment” (*i.e.*, arms, hands, legs, or feet). “Evisceration/disembowelment” concerns suction applied directly to the intestines, such as when a child sits on an open sump. “Hair entrapment” occurs when hair becomes caught in an outlet cover. Incidents involving hair were coded as “hair entrapments.” “Mechanical entrapment” involves articles of clothing, jewelry, or appendages caught in an outlet cover. “Appendages” refer to digits (*i.e.*, fingers or toes). Incidents involving these items only were coded as “mechanical entrapments.” Finally, “body entrapment” occurs when suction is applied to a large portion of the body or limbs. For purposes of this report, incidents were coded as a “body entrapment” if the entrapment involved a portion of the body not covered by the other types of entrapment. Examples of body entrapment include suction to areas such as: the shoulder and upper arm, abdomen, back, or hip.

The incidents reported to CPSC staff identified body (13 victims, 33 percent) and limb (12 victims, 31 percent) entrapment as the most frequent type of entrapment. This is followed by mechanical (6 victims, 15 percent) and hair (5 victims, 13 percent) entrapment, and finally eviscerations/disembowelments⁴ (3 victims, 8 percent). Figure 5 displays circulation entrapment victim data by entrapment type and severity.

Figure 5
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Entrapment Type and Severity, 2008–2012



Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

³ ANSI/APSP-7 2006, *American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins*, p. viii.

⁴ Evisceration or disembowelment involves suction applied directly to the rectum with injuries ranging from prolapse of the rectum to small intestine removal. Incidents involving prolapsed rectums that retracted and required no further medical attention are now classified as eviscerations or disembowelments. They were previously counted as body entrapments.

A majority of the 18 pool entrapment victims experienced limb (8 victims, 44 percent) and mechanical (5 victims, 28 percent) entrapment. The 13 spa victims experienced mostly body (6 victims, 46 percent) and all of the hair (5 victims, 38 percent) entrapments. The 8 whirlpool bathtub victims experienced mostly body (4 victims, 50 percent) and limb (3 victims, 38 percent) entrapments. Table 5 gives the counts by entrapment type and product category.

Table 5
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Entrapment Type and Product Category, 2008–2012

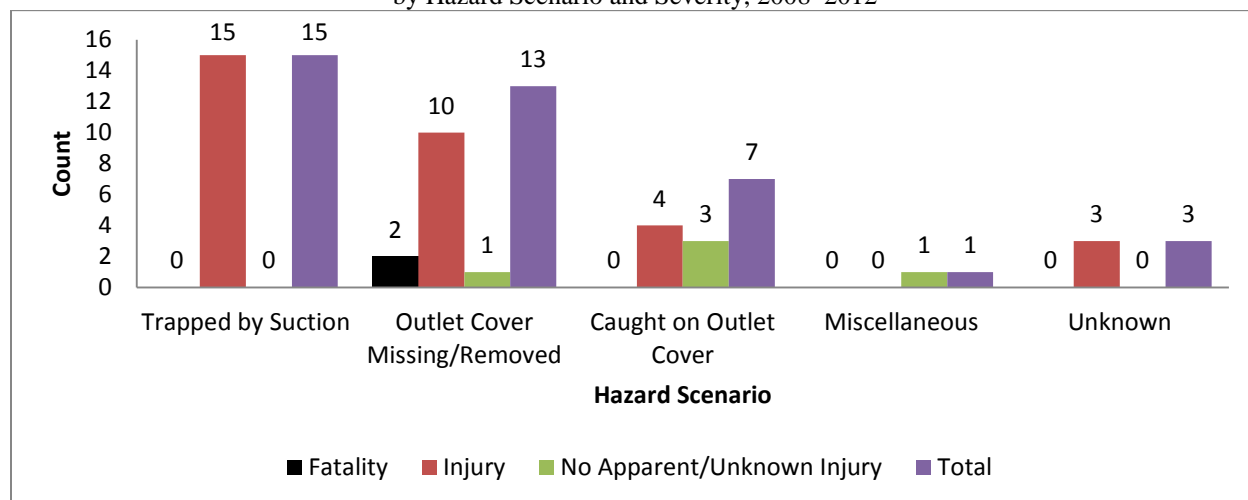
| Circulation Entrapment Type | Pool | Spa | Whirlpool Bathtub | Row Total |
|---|-------------|------------|--------------------------|------------------|
| Body | 3 | 6 | 4 | 13 |
| Limb | 8 | 1 | 3 | 12 |
| Mechanical | 5 | - | 1 | 6 |
| Hair | - | 5 | - | 5 |
| Evisceration/ Disembowelment | 2 | 1 | - | 3 |
| Total | 18 | 13 | 8 | 39 |

Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

Hazard scenarios for the reported incidents were categorized by reviewing the report narratives and coding the incidents based on the following hierarchical categories: If the report indicates that an outlet cover was missing or removed, then the incident was assigned to the respective category. If the report states that the individual was caught on the outlet cover, but there is no further description of the status of the cover, the incident was characterized as “caught on outlet cover.” If the report indicates that the suction was holding the individual down, but there is no further mention of the outlet, then the incident was classified as “trapped by suction.” An incident in which neither the outlet/outlet cover nor suction was mentioned were categorized as “unknown.”

Many of the incidents (15 victims, 38 percent) involved scenarios where the victim was being held to the drain by the suction force. Another large portion (13 victims, 33 percent) involved issues with missing or removed outlet covers. An additional set of incidents (7 victims, 18 percent) involved the victim being caught on the outlet cover. One incident was classified as “miscellaneous” because although the scenario was known, the scenario did not fit into the other categories. The remaining incidents (3 victims, 8 percent) did not provide sufficient details to categorize the hazard scenario. Figure 6 enumerates the results of the hazard scenario categorizations for circulation entrapments related to pools, spas, and whirlpool bathtubs.

Figure 6
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Hazard Scenario and Severity, 2008–2012



Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

Most of the pool victim scenarios (11 victims, 61 percent) were related to a missing or removed outlet cover. The spa victims were mainly trapped by suction (7 victims, 54 percent) and caught on an outlet cover (5 victims, 38 percent). The majority of the whirlpool bathtub victims were trapped by suction (6 victims, 75 percent). Table 6 shows these counts.

Table 6
Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs
by Hazard Scenario and Product Category, 2008–2012

| Hazard Scenario | Pool | Spa | Whirlpool Bathtub | Row Total |
|------------------------------|------|-----|-------------------|-----------|
| Trapped by Suction | 2 | 7 | 6 | 15 |
| Outlet Cover Missing/Removed | 11 | 1 | 1 | 13 |
| Caught on Outlet Cover | 2 | 5 | - | 7 |
| Miscellaneous | 1 | - | - | 1 |
| Unknown | 2 | - | 1 | 3 |
| Column Total | 18 | 13 | 8 | 39 |

Source: CPSC databases, including NEISS, IPII, DTHS, and INDP. Data extracted and entrapment database updated in January 2013. Reporting is ongoing for all of these years.

Appendix A

Methodology for Extracting Reported Circulation Entrapments Associated with Pools, Spas, and Whirlpool Bathtubs

Data were extracted on January 11, 2013, from the National Electronic Injury Surveillance System (NEISS), Injury and Potential Injury Incidents (IPII), Deaths (DTHS), and In-Depth Investigations (INDP) databases for the product codes enumerated in Table 7 for data entered in 2012, and merged with data from last year’s memorandum (1999–2011) to update the data for the 2008 through 2012 timeframe. The time period was adjusted from last year’s report to focus on recent incidents.

Table 7–Product Codes Used in Extracting Circulation Entrapment Data

| Product Code | Description |
|--------------|---|
| 3221 | Above-ground swimming pools |
| 3251 | Built-in swimming pools |
| 3262 | Swimming pool equipment |
| 5043 | Portable swimming pools |
| 1246 | Wading pools |
| 1284 | Swimming pools, not specified |
| 3274 | Swimming (activity) |
| 698 | Hot tubs or home spas |
| 609 | Glass bathtub or shower enclosures |
| 610 | Nonglass bathtub or shower enclosures |
| 611 | Bathtubs or showers |
| 4030 | Bathtub or shower enclosures, not specified |

Within these product codes, suction/entrapment incidents were identified using the following keyword search terms: “SUCTION,” “SUCK,” “STUCK,” “TRAP,” “CAUGHT,” “HELD,” “TANGLE,” “UNDER,” “WEDGE,” “JAMM,” “DRAIN,” “PUMP,” “FILTER,” “PIPE,” “INTAKE,” “GRATE,” “COVER,” “HAIR,” “LIMB,” “ARM,” “HAND,” “FINGER,” “THUMB,” “LEG,” “FOOT,” “FEET,” “TOE,” “BRUISE,” “DROWN,” or “SUBMER.” Also, all NEISS cases were reviewed that had a diagnosis of “submersion (69).” NEISS data are from a probability-based sample. Sampling weights are used to project the cases from NEISS hospitals to national estimates, provided the sample counts are large enough. Due to the small number of suction/entrapment cases in NEISS, these cases were used in the case count and not projected nationally.

Reports were reviewed to eliminate cases that did not involve circulation entrapments. It should be noted that, for a given year, incidents are included on an ongoing basis for IPII and DTHS. In particular, additional reports generally continue to be received for the most recent years. Information from these cases was extracted into an Excel spreadsheet and sorted by incident state and date. Source documents were checked to eliminate duplicate incident reports. Fatal incidents are notable events in the community where they occur; often, for a single incident, there were multiple news reports (IPII); a medical examiner’s report (IPII); a death certificate (DTHS); an In-Depth Investigation (INDP); and, less frequently, a hospital emergency department report (NEISS). IPII is a mixture of various types of information, including newspaper clippings, consumer complaints, and reports from other state and local government

agency personnel, such as medical examiners/coroners. Information is submitted voluntarily to IPII, so staff cannot be sure that information on all of the deaths has been received. Once the incident set was established, the incident reports were examined to code the additional characteristics of circulation entrapment type and hazard scenario.

Appendix B - Summary of 36 Reported (39 victims) Circulation/Suctions Entrapment Incidents for Pools, Spas, and Whirlpool Bathtubs, 2008–2012

| Report # | Year | Product type | Severity | Age (yrs) | Sex | Entrapment type | Scenario | Narrative |
|----------|------|-------------------|-------------------|-----------|-----|------------------------|------------------------------|--|
| 1 | 2012 | Pool | Injury | 3 | F | Eviscerate/ Disembowel | Outlet cover missing/removed | A 3-year old female was entrapped on an uncovered single drain inside a wader pool. The drain cover came off the drain. It was determined that only two screws instead of four secured the drain cover to the drain. The safety vacuum release system (SVRS) did not activate. The owner of the pool shut off the SVRS and pump using a secondary on/off switch and the child was immediately released. The child was taken to a hospital where she was treated for a prolapsed rectum. She was released the next day. |
| 2 | 2012 | Pool | Injury | 4 | F | Limb | Outlet cover missing/removed | A four year old female stuck her arm and hand into the open vacuum port hole in the side of the swimming pool where she became stuck. She received only a couple of scratches to her lower left arm. The vacuum pump was not operating at the time of the incident. |
| 3 | 2012 | Pool | Injury | 10 | M | Limb | Trapped by suction | A 10-year-old boy suffered bruising on both thighs when he became trapped on a lily pad skimmer in a condominium pool. Bystanders broke the skimmer to release suction from the pump and release the victim's legs. The pool pump was on direct suction without a secondary anti-entrapment system. |
| 4 | 2012 | Pool | No App/Unk Injury | Unk | F | Mechanical | Caught on outlet cover | A woman's belly button ring became entangled with a drain cover in a shallow pool but she was freed without injury. She became stuck as she floated on her stomach with her child in the pool. Firefighters tried to turn the ring to free her but then started to drain pool. |
| 5 | 2012 | Spa | Injury | 3 | F | Eviscerate/ Disembowel | Trapped by suction | 3 YOF Patient was home sitting in hot tub when she got stuck onto a vent mom pulled her out now w/ rectal prolapse. Diagnosis rectal prolapse. |
| 6 | 2012 | Spa | Injury | 21 | F | Hair | Caught on outlet cover | 21 YOF got hair caught in hot tub drain and went under near drowning |
| 7 | 2012 | Whirlpool bathtub | Injury | 6 | F | Limb | Trapped by suction | Two girls , ages 6 and 7, became suctioned to the intake grate cover in a whirlpool bathtub while taking a bath together. The children sustained bruises on their legs. No additional medical treatment was sought and the bruising subsequently healed without further complications or injuries. |
| | | | Injury | 7 | F | Limb | Trapped by suction | |
| 8 | 2011 | Pool | Injury | 4 | M | Body | Outlet cover missing/removed | A four-year-old male received severe bruising to the rectal area when he was entrapped on an uncovered drain in an in-ground wading pool. There were no other injuries in this incident. |
| 9 | 2011 | Pool | No App/Unk Injury | 5 | F | Mechanical | Miscellaneous | A metal charm hanging from a string in the hip area of a 5 year-old girl's one-piece bathing suit became snagged on the plastic grate which covered a gutter-style trench around a public pool. The girl's legs and torso entered the water while her hip was stuck against the side of the pool. Her 8 year-old sister assisted her before the metal charm broke off and freed her. The girl was not injured. |
| 10 | 2011 | Pool | Injury | 8 | F | Limb | Outlet cover missing/removed | An eight year old female was swimming in an in-ground pool at her apartment complex. She attempted to get out of the deep end of the pool by sticking her left arm in a pool vacuum line for leverage. Her arm became stuck in the pipe. Emergency personnel extricated the pipe from the pool deck and the victim was transported to the hospital emergency room where the pipe was cut off of her arm. She sustained minor bruises and is still experiencing cold chills said to be caused by trauma. Treated and released the same day from a local hospital. |
| 11 | 2011 | Spa | Injury | 10 | M | Body | Trapped by suction | A ten year old male and a twelve year old female sustained lacerations, contusions and abrasions to their backs after becoming entrapped on the drain cover and submerged while in a 25 person hot tub/spa of an in-door water park facility. Both victims, who are cousins, received first aid at the scene of the incident but no outside medical treatment was sought at the time of the incident. |
| | | | Injury | 12 | F | Body | Trapped by suction | |

| Report # | Year | Product type | Severity | Age (yrs) | Sex | Entrapment type | Scenario | Narrative |
|----------|------|-------------------|-------------------|-----------|-----|-----------------|------------------------------|---|
| 12 | 2011 | Spa | No App/Unk Injury | 13 | F | Hair | Caught on outlet cover | A 13 year old female's hair became entangled in the skimmer of a hotel hot tub. A guest was able to extract the girl's hair from the drain cover before any serious injury occurred. |
| 13 | 2011 | Spa | Injury | 13 | F | Hair | Caught on outlet cover | 13 YOF was in hot tub under H2O to retrieve bracelet hair caught into filter 1 min now Left eye pain. Diagnosis- near drowning/left eye hemorrhage. |
| 14 | 2011 | Whirlpool bathtub | Injury | 38 | F | Body | Trapped by suction | A 38 year old white female and a 49 year old white female became stuck to the suction intake cover of the whirlpool bathtub they were using in separate incidents. Both women were staying at a hotel room equipped with the tub. Each victim suffered minor skin injuries. |
| | | | Injury | 49 | F | Body | Trapped by suction | |
| 15 | 2010 | Pool | Injury | 9 | F | Mechanical | Unknown | The 9 year old female victim was diagnosed with a fractured toe. The victim was taking swimming lessons in an inground, indoor pool, at a recreation center. The victim went to turn around. As she turned she got her toe caught in a small drain at the bottom of the pool. The victim's toenail was caught. She fractured her toe and lost her toenail at the ER. The victim's mother called her doctor and was told to take the victim to the hospital. The victim was taken to the ER where she was treated and released. |
| 16 | 2010 | Spa | Injury | 4 | F | Body | Trapped by suction | A 4 YOF sat on the intake for a spa filter at a motel and became entrapped. The victim was pinned in a sitting position on the drain which was lacking a cover. The water was four inches deep and her head was not submerged. She was treated and released from a local hospital with bruises on her lower body. She has recovered without complications. The spa pump was not equipped with a vacuum safety release system. |
| 17 | 2010 | Spa | Injury | Unk | M | Body | Trapped by suction | Consumer reports that his son was injured while sitting near skimmer in hotel hot tub. He reportedly leaned back & was sucked in/ held against side of tub. Consumer's wife & daughter, 16 YOF, pulled him & he was rushed to emergency room with bruising & skin & muscle trauma. |
| 18 | 2010 | Whirlpool bathtub | Injury | 37 | F | Mechanical | Unknown | 37 YOF got toe caught in whirlpool tub jet. toe fracture |
| 19 | 2009 | Pool | Injury | 3 | F | Limb | Outlet cover missing/removed | A 3 year old girl was entrapped above water in a swimming pool after her left arm became stuck inside a vacuum port opening located on one of the pool's walls. The child was able to breathe as her head remained above water. Local fire rescue was forced to breach the wall with power tools in order to free the child from the pipe. The child was transported to an area hospital in stable condition. |
| 20 | 2009 | Pool | Injury | 7 | F | Body | Trapped by suction | The seven-year-old female victim sustained a large bruise to her inner left thigh when the suction from a 1.5" suction outlet serving a 1.5 HP pump, sucked her left leg up against the wall of a lazy river at a public water park. She was pulled under water for several seconds. Her 11-year-old female cousin helped free the victim from the suction of the pipe. The victim's mother took her to her physician the next day to document her injury. |
| 21 | 2009 | Pool | Injury | 14 | M | Mechanical | Outlet cover missing/removed | A 14-year-old male victim nearly drowned when he became entrapped in the drain area of a large waterfall at a swimming pool of a family member's apartment complex. The victim, wearing a t-shirt and swimming suit, was taking his turn backing up the drain for the waterfall and letting the suction hold him to the side of the pool- which many of his family members had done before him. Four adults tried to pull the victim out of the water, but he was retrieved from the entrapment only after the water pumps to the waterfall were turned off. The victim was revived at the scene. |
| 22 | 2009 | Pool | Injury | 8 | M | Body | Outlet cover missing/removed | An 8 year old male was swimming in a metal frame above-ground pool when he suddenly became entrapped at the suction filter opening. His mother was able to pull the victim free. Inspection of the pool showed that the protective cap over the filter opening had come off. The victim suffered a 5" bruise to his left shoulder area. |

| Report # | Year | Product type | Severity | Age (yrs) | Sex | Entrapment type | Scenario | Narrative |
|----------|------|-------------------|-------------------|-----------|-----|------------------------|------------------------------|---|
| 23 | 2009 | Spa | Injury | 27 | F | Body | Trapped by suction | Patient got caught in a suction in a hot tub, DX back contusion |
| 24 | 2009 | Spa | Injury | 5 | M | Limb | Outlet cover missing/removed | A 5 year old boy nearly drowned after his right arm became entrapped in the suction drain of the spa in his home's in-ground pool. Police reportedly arrived and attempted to pull the child, who was totally submerged, from the drain. Minutes passed before the child's 6 year old brother found the shut-off button for the suction. The boy was revived on scene and transported to an area hospital by fire rescue. The child is said to be in excellent condition with no permanent injuries from the incident. A drain cover was found detached and at the bottom of the spa. |
| 25 | 2009 | Whirlpool bathtub | Injury | 6 | F | Body | Trapped by suction | A six-year-old female sustained significant bruising over a large portion of her back and arms after being suctioned to the intake grill of a whirlpool bathtub in her home. Her mother had been bathing her, along with 2 siblings, when she stepped out of the bathroom for a moment. The mother then heard the victim's strained voice and found her stuck to the grate. The victim's older sibling had shut the water off. The female was taken to an emergency room where she was treated and released, and has since fully recovered. |
| 26 | 2009 | Whirlpool bathtub | No App/Unk Injury | 50 | F | Limb | Outlet cover missing/removed | A 50 year old female was in a whirlpool tub when a washcloth broke the tub's suction cover and her leg became trapped against the broken cover. The whirlpool's pump shut off after the washcloth was drawn into it. There was no injury. The consumer later discovered that the suction cover had been recalled in 1994 by the manufacturer because it did not meet the voluntary standard. When the consumer attempted to obtain a replacement cover he was told that the suction cover was no longer covered by the recall and he would have to purchase a new cover for \$40.00. |
| 27 | 2008 | Pool | Fatal | 6 | F | Eviscerate/ Disembowel | Outlet cover missing/removed | A six-year-old female came in contact with the single main drain on an in-ground, outdoor, wading pool at a golf club. The drain's cover had come off. The suction from the pool's pump system tore the child's rectum and pulled out a portion of her intestines. The victim was able to remove herself from the wading pool. Victim died later from injuries sustained during this incident. |
| 28 | 2008 | Pool | Fatal | 14 | F | Limb | Outlet cover missing/removed | A fourteen year old girl died from injuries that she sustained after her arm became entrapped in a built in swimming pool drain. The victim and two of her friends accessed the private swimming pool late at night by climbing a locked gate. The victim died five days after the incident from anoxic encephalopathy, due to near drowning. The death was ruled an accident. |
| 29 | 2008 | Pool | Injury | 9 | M | Limb | Unknown | A 9 year old boy's arm got stuck in swimming pool pipe. The boy had some numbing in his fingers. |
| 30 | 2008 | Pool | Injury | 35 | F | Mechanical | Caught on outlet cover | The 35 year old female victim fractured her left big toe when it was struck in a grate at a public park's in - ground pool. She walked over the grate and it "sucked" her foot in with her toe getting stuck. Personnel at the pool were able to pry her toe loose. However, later that evening her toe continued to hurt so she went to the ER. They treated her, told her the toe was fractured and put her foot in a "walking cast" and she was released. She is recovered. Note: the victim's sister advised that the same thing happened to her a month prior to this incident. |
| 31 | 2008 | Pool | Injury | 2 | M | Limb | Outlet cover missing/removed | A 2-year old boy got his hand and arm entrapped in the suction line of a below-ground wading pool. The safety grate that covers the line was missing. It could not be found by paramedics. The boy was evaluated at a hospital. He had swelling around his hand and minor scratches on his arm. It took two hours for paramedics to extricate the boy's arm from the suction line. |
| 32 | 2008 | Pool | Injury | 4 | F | Limb | Outlet cover missing/removed | A 4 year old girl nearly drowned after her left arm became entrapped inside an opening on a side wall of her family's in-ground pool. After several attempts, her mother was able to dislodge the arm and lift the child out of the water. The child was not breathing and had to be resuscitated. The child was transported to a hospital where she was admitted, treated and released. The side wall opening is said to have contained a vacuum lock safety wall fitting which apparently floated out of the opening. |

| Report # | Year | Product type | Severity | Age (yrs) | Sex | Entrapment type | Scenario | Narrative |
|----------|------|-------------------|-------------------|-----------|-----|-----------------|------------------------|---|
| 33 | 2008 | Spa | No App/Unk Injury | 10 | F | Hair | Caught on outlet cover | An unattended 10-year old female was involved in a near-drowning incident when her hair became entangled in a hot tub/spa's water intake/filter component (side wall). Her parents witnessed the incident from inside the rental house. The father released the child from the intake device by cutting her hair with a pocket knife. She was not hospitalized. She did not require medical treatment. |
| 34 | 2008 | Spa | Injury | 11 | F | Hair | Caught on outlet cover | An 11-year-old, female victim was involved in a non-fatal submersion incident when her hair became trapped in a spa-suction, drain cover. The victim's mother had been watching her but went inside for a few minutes. When the mother came out, the victim was face down underwater, unresponsive. A ten-year-old boy was able to pull the victim's hair out of the drain cover and she was removed from the spa. The parents performed CPR on the victim until paramedics arrived to treat her and fly her to a local hospital where she stayed for three days. |
| 35 | 2008 | Spa | Injury | 15 | F | Body | Trapped by suction | A 15-year old female, while in a hot-tub and underwater, became entrapped in the suction power of a pump (above water) and a drain cover that was located at the bottom of the hot-tub. The 15-year old was able to dislodge herself from the entrapment. She had marks on her back from the incident but no medical attention was sought. |
| 36 | 2008 | Whirlpool bathtub | Injury | 46 | F | Body | Trapped by suction | A 46 year old female was using a hot tub in a hotel. The switch to turn the tub off/on is in the hall and not in the bathroom with the hot tub. The victim turned the tub on and got in. After a while she decided to add some hot water. After she did this she slid back to the other side of the hot tub, when she wound up getting sucked into one of the "jets" in the hot tub. She was unable to free herself. When her husband came back into the room he saw she was stuck and went into the hall to turn the hot tub off. When he did the victim was freed; she was taken to the ER where she was treated. |