

Pools and Child Care Facilities

Fall 2001

The Honorable Tim Wilkin of the Minnesota House of Representatives asked the Minnesota Department of Health (MDH) to provide input on legislation that would change the requirements for swimming pools at licensed family and group family child care facilities. The proposed legislation removes licensed family and group family child care swimming pools from regulation under the Pool Code, Minnesota Rules Chapter 4717. The legislation does not specify the requirements child care providers must meet in order to have a pool at their facility. The Minnesota Department of Health has prepared this report to provide information on options that may be considered on this issue.

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Environmental Health Division
Environmental Services Section

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Executive Summary

The Honorable Tim Wilkin of the Minnesota House of Representatives asked the Minnesota Department of Health (MDH) to provide input on legislation that would change the requirements for swimming pools at licensed family and group family child care facilities (House File 1832, 2001 Session, excerpt attached). The proposed legislation removes licensed family and group family child care swimming pools from regulation under the Pool Code, Minnesota Rules Chapter 4717. The legislation does not specify the requirements child care providers must meet in order to have a pool at their facility. The Minnesota Department of Health has prepared this report to provide information on options that may be considered on this issue.

There are three options for regulation of licensed child care pools:

- make no change to current regulations,
- exempt these pools from any requirements, and
- create a lesser set of standards for family and group family child care pools.

There are three major factors to be considered for each of these options: health and safety protection, compliance monitoring for regulations, and liability of child care providers and licensing agencies for harm to pool users.

Under current regulations, pools at licensed child care facilities are considered public pools and they are reviewed and inspected during construction through a fee-based program at the Minnesota Department of Health (MDH). After construction, these pools are inspected by state or local child care licensing staff. There are a number of child care facilities that have pools that do not comply with the current pool regulations, and the providers are not able to use these pools for children under care.

Retaining current regulations creates no change in health and safety protection or liability, but prevents providers from using or constructing pools that do not comply with the code.

Exempting family and group family child care pools from the Pool Code and MDH authority might eliminate review and construction inspection by state or local agencies altogether, or shift responsibility for plan review and construction inspection to the Minnesota Department of Human Services (DHS) or delegated county licensing programs. This option would allow use of a wide variety of types of pools, and providers and parents would evaluate risks of disease transmission, drowning, and injury. Because this activity would be largely unregulated, tort laws that make licensing agencies liable for harm should be changed to eliminate claims against those agencies.

Creating a lower set of standards for family and group family child care pools than the Pool Code would allow use of “residential” pools at these facilities, for physical activities for

children and for water safety instruction and swimming lessons. However, lesser standards may lead to increased risk of disease transmission, injury, and drowning. Increased risk of harm creates an increase in liability to providers and licensing agencies. Again, if this option is selected, tort laws that make licensing agencies liable for harm should be changed.

It should be noted that the population most susceptible to water-borne disease transmission and drowning are children under school age. Size, behavior, and ability to assess risk make them more vulnerable than older children and adults. This is also the group served by child care facilities, and for which these lesser standards are being proposed.

These options and issues are addressed in greater detail in this report.

Background

Since 1971, pools at licensed child care facilities have been defined as public pools in the Pool Code, Minnesota Rules Chapter 4717. These were most recently revised in 1995. The Pool Code provides a minimum standard for health and safety protection for pool users in a public or business setting. The Minnesota Department of Health (MDH) requires submission of plans and specifications for approval and a plan review fee, prior to construction of public pools. MDH staff inspect construction. There is no further involvement of MDH after construction of child care pools is completed according to approved plans, although MDH may investigate complaints on public pools. Thereafter, child care licensing agencies may inspect pools for compliance with the requirements of Minnesota Rules Chapter 9502.0425, Subpart 3:

Subp. 3. Water hazards. Swimming and wading pools, beaches, or other bodies of water on or adjacent to the site of the residence must be inaccessible to children except during periods of supervised use. Wading pools, as defined in chapter 4717, must be kept clean. When children use a swimming pool, as defined in chapter 4717, or beach, an attendant trained in first aid and resuscitation shall be present. Any public swimming pool, as defined in chapter 4717, used by children must meet the requirements of chapter 4717.

At present, there are few pools at licensed family and group family child care facilities that meet the Pool Code. Some licensed providers were unaware that child care pools must meet the Pool Code, and installed pools not in compliance with the code or had existing pools designed for single family use that do not comply. A number of licensed child care providers who have pools at their facilities have expressed an interest in changing Minnesota child care pool requirements to allow the legal use of their pools for water safety instruction and water activities. A change in the regulations may also make it more affordable for other providers to install pools.

MDH staff have spent several hundred staff hours reviewing this matter. MDH held a meeting with interested parties to hear input (attached to report), reviewed literature and other states' rules, and collected pertinent information about pool use, disease transmission, injury, and drowning, cited in the bibliography attached to this report.

At the meeting with interested parties, there were several areas of agreement. Everyone was in favor of kids having fun, noted the benefits of water activities, and agreed that health and safety protection were a critical part of child care provider and parent interests. However, there was disagreement as to the minimum standards necessary to protect pool users from risk of disease transmission and drowning or injury. At issue is the level of regulation needed for health and safety protection for licensed family and group family child care pools.

Disease outbreaks, drowning and injury can happen in either public or residential pools (where public pools are those constructed according to the Pool Code and used in a public or business setting). However, the public may have an expectation that public or licensed facilities meet a certain standard of health and safety protection, set by regulation and inspected by health department or licensing staff. Although family and group family child care facilities are family homes, they are licensed businesses. Advocates for lower standards for pools at these facilities contend that children may use non-public pools at residences, but the same type of pool cannot be used in a licensed child care facility, which seems unfair if parents agree to their children using the pool. At issue is the protection and expectations in a licensed, as opposed to residential, setting.

Evaluation of the ramifications of new, lower minimum standards than provided by the Pool Code for pools at licensed family and group family child care facilities is difficult, and discussed in greater detail in the sections on “Options” and “Pool Safety.” There are a wide variety of regulations among different states for child care pools.¹ There are also National Health & Safety Performance Standards Guidelines for Out-of-Home Child Care Programs for swimming, wading and water at the following website: <http://nrc.uchsc.edu/national/5-4.html#wq>. These are prepared by the National Child Resource Center for Health and Safety in Child Care, which is funded by the Maternal and Child Health Bureau, U.S. Department of Health and Human Services.

Risks of disease transmission, injury, and drowning in pools are controlled by sanitation, structural features, equipment, and supervision. Pool Code requirements are designed to minimize potential for harm by use of robust disinfection systems, limits on pool capacity (use), and safety provisions in rules for fences, pool access, pool bottom slope, water depths, etc. Each pool rule defines a minimum standard for protection of health and safety, and ease of operation and maintenance, based on recommendations developed at the regional or national level and experience in Minnesota with public pools.

The Pool Code provides minimum standards for construction of public pools. The cost of constructing a pool to the Pool Code is greater than for most residential pools. Cost differences are found throughout the construction materials and methods, and pool water treatment equipment.

¹“Individual States’ Child Care Licensure Regulations,” National Resource for Center for Health and Safety in Child Care, <http://nrc.uchsc.edu/index.html> (search on “pool”)

There are currently a total of 14,370 licensed family and group family child care licenses in Minnesota which could accommodate up to 160,806 children. More information about provider/child ratios and facility capacity may be found in the Supporting Information section “Child/Adult Ratios and Family and Group Family Child Care Facilities.”

The number of pools at these facilities is unknown, but there may be several hundred ranging from wading pools and nonfiltered above-ground pools to in-ground pools with filtration and disinfection systems.

The current bill language (H.F. 1832) states that the provider’s pool “meets several other requirements relating to maintaining the health and safety of children using the swimming pool,” but does not define the requirements which must be met or provide funding for plan review or inspections. In the absence of plan review, inspections, or other compliance checks, these other undefined requirements may have no practical effect.

Options

There are essentially three options available for regulating pools at family and group family child care facilities in Minnesota:

- Make no change to current rules and statutes.
- Exempt family and group family child care facility pools from any state requirements,
- Provide specific language for alternative requirements to protect health and safety, as referenced in Article 12 of House File 1832.

These are discussed briefly below in context with the following key issues:

- Health and safety protection relative to risk of disease transmission or of drowning or near-drowning injury
- Checking compliance with pertinent rules and statutes by the licensing agency
- Liability for provider and regulatory agencies

Option 1 – Make no change to present rules and statutes

Health and Safety Protection. Making no change to the present rules (Pool Code) keeps the status quo, maintaining standards for health and safety protection at present levels.

Compliance Programs. No new regulatory programs would be created and state and local agency liability for harm would also remain the same.

Liability. Of the three options, this provides the highest level of health and safety protection for children at care facilities and lowest risk of liability to licensing agencies and providers.

Costs. There are some associated cost issues. Providers who installed pools that do not comply

with the code are prohibited from using them. This prohibition could result in financial losses to the provider if parents seek child care elsewhere because a pool is no longer available, or it may result in a higher cost for installation of a code-compliant pool.

Option 2 – Exempt Family and Group Family Child Care Pools from Regulation

Health and Safety Protection. Exempting these categories of licensed child care facilities from pool regulations would remove restrictions on the types of pools that could be used at these facilities. This would allow use of pools already constructed but not in compliance with the pool code, and allow installation of lower cost pools at facilities that don't have pools. It would leave evaluation of health and safety risks related to the pools up to the child care providers and families, and take it out of the hands of state and local licensing agencies. That is, this would presume that parents and providers have the expertise to evaluate the pool structure, water treatment and disinfection equipment, fencing and associated safety equipment for risk under the expected use at the facility to prevent disease transmission, drowning, or injury, instead of review and approval of construction by MDH. It is important to note that with this option there would be no restrictions on the type of pools that could be used, including those without disinfection equipment or pool access or safety equipment specifications, and those with deep water and steep dropoffs that create a drowning hazard.

Compliance Programs. There would be no additional regulatory program(s) required, other than those requirements described in Minnesota Rules Chapter 9502 regarding supervision and access to the pools, as the structures would be exempt.

Liability. Licensing agencies are liable for harm under present tort laws. By deregulating these pools, this option increases liability for harm to providers and state and local licensing agencies. Liability claims would result in increased costs to local and state licensing agencies. Typical costs for near-drowning injury claims are noted later in this report (typically \$2,000 to \$80,000). Claims related to drowning and serious medical conditions (e.g. hemolytic uremic syndrome) are more difficult to predict. If more pools are installed under this option, increased risk of liability is probable, given that sanitation and supervision are key components in prevention of harm. Tort laws that make licensing agencies liable for harm should be changed to eliminate claims against those agencies.

The Minnesota Department of Human Services notes that during the past two years, approximately 123 sanctions in family child care settings (including conditional licenses, suspensions, and revocations) have been issued based at least in part on violation of supervision requirements. It should be noted that these sanctions represent the most serious violations, and that in addition, numerous correction orders are issued for less serious violations. With regard to sanitation violations, approximately 17 sanctions were based at least in part on such a violation. The statistics in the section on “Drowning and Near-drowning Injury” indicate that proximity and supervision are key factors in drowning, near-drowning, and injuries to pre-school children. Additional information on pool-related outbreaks, which generally occur in pools where disinfection has failed or where disinfection was not a part of pool maintenance, is provided in

the Supporting Information section on “Disease Transmission”.

Option 3 – Create a new standard for Family and Group Family Child Care Pools

Creating a lesser standard for pools at family or group family child care facilities could allow use of some or all existing pools that do not comply with the Pool Code. It might also result in more pools being installed at child care facilities.

Health and Safety Protection. Lessening standards in rules for pool safety and health protection may also result in more exposure to disease and risk of injury or drowning for individuals at licensed child care facilities, compared to the present requirements under the Pool Code. The number of such events is difficult to predict. A higher level of management for pool cleaning and disinfection (e.g. frequent monitoring and correction), lower use rates than for public pools, and a high level of supervision may be necessary to attempt to offset the loss of controls offered by pools constructed according to the Pool Code.

Establishing a different set of standards for these pools is difficult and would require evaluation and language for the topics listed in the section “Pool Safety.” There are national and regional publications on technical standards recommended for public pools.² There are also recommendations for pool construction and operation in the child care setting in “National Health and Safety Performance Standards, Guidelines for Out-of -Home Child Care Programs” that reference the National Sanitation Foundation requirements³.

Compliance Programs. If alternative regulations or code are proposed for family and group family child care pools, a new system for monitoring compliance may need to be developed by licensing agencies. It must also be determined whether plan review prior to construction and periodic inspections should be required. This would require additional government resources for inspections and enforcement, since MDH would no longer be involved in fee-supported review of the pools prior to operation. If a child is injured or drowns, or requires hospitalization, compliance with the regulations may be an issue in regard to liability and sanctions on providers.

Liability. Under present law both the licensing agencies and child care provider may be held liable for damages. Again, with increased risk of harm, there is increased risk of liability to provider and licensing agencies. Tort laws that may hold licensing agencies liable for harm should be changed to eliminate claims against those agencies. There is additional discussion on

²“Recommended Standards for Swimming Pool Design and Operation.” Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1996 Edition.

³“Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.” National Sanitation Foundation International Standard 50. 1996 (2000 edition available).

this issue in “Option 2.”

The table below provides a summary of the options and these issues.

Options for Pool Construction & Operation Requirements	Compliance Check and Enforcement - Construction	Compliance Check and Enforcement - During Operation	Risk of Disease Transmission	Risk of Drowning or Near-drowning Injury	Liability for Damages for Disease, Injury, or Death
No change to current pool rules	MDH	Licensing agency	Minimized	Minimized	Providers and Licensing Agencies
Exempt from any pool requirements	None	None	Increased over current pool rules	Increased over current pool rules	Providers and Licensing Agencies (Amend so licensing agencies immune?)
Amend H.F. 1832 with specific pool requirements	DHS or county licensing agency?	Child care licensing agency	Unknown, likely higher than under Pool Code	Unknown, likely higher than under Pool Code	Providers and Licensing Agencies (Amend so licensing agencies immune?)

Supporting Information

Child/Adult Ratios and Family and Group Family Child Care Facilities

The Minnesota Department of Human Services notes that there are currently a total of 14,370 licensed family and group family child care licenses with a total licensed capacity of 160,806 children.

The breakdown of licensed capacity by class or family vs. group family child care is as follows:

Class A (family child care) = 42,142

Classes B1 and B2 (specialized infant and toddler care) = 676

Group family child care:

Class C1 (total ten children, 8 under schoolage) = 31,492

Class C2 (total 12 children, 10 under schoolage) = 56,038

Class C3 (total 14 children, ten under schoolage, two caregivers) = 30,348

Class D (specialized infant and toddler group care) = 108

As set in Minnesota Rule 9502.0367, child/adult ratios and age distribution restrictions are as follows:

Class A. Family Day Care:

Child/Adult Ratio		Age Restrictions	
Licensed Capacity	Adults	Total children under school age	Total infants and toddlers
10	1	6	Of the total children under school age, a combined total of no more than 3 shall be infants and toddlers. Of this total, no more than 2 shall be infants.

Classes B1 and B2. Specialized Infant and Toddler Family Day Care:

Child/Adult Ratio		Age Restrictions	
Licensed Capacity	Adults	Total children under school age	Total infants and toddlers
5	1	3	No more than 3 shall be infants.
6	1	4	No more than 2 shall be infants.

Classes C1, C2, and C3. Group Family Day Care:

Child/Adult Ratio		Age Restrictions	
Licensed Capacity	Adults	Total children under school age	Total infants and toddlers
10	1	8	Of the total children under school age, no more than 3 shall be infants and toddlers. Of this total, no more than 2 shall be infants.
12	1	10	Of the total children under school age, no more than 2 shall be infants and toddlers. Of this total, no more than 1 shall be an infant.
14	2 – A helper may be used in place of a second adult caregiver when there is no more than 1 infant or toddler present.	10	Of the total children under school age, a combined total of no more than 4 shall be infants and toddlers. Of this total, no more than 3 shall be infants.

Please see “Swimming Instruction for Young Children in the Child Care Setting” for comparison of instructor/student ratios recommended by the American Red Cross for water safety instruction.

Health and Safety Protection

Disease Transmission

Microorganisms that cause disease are deposited in outdoor pools by pool users, wind, and animals (e.g. birds). There are studies of recent documented cases of disease outbreaks and studies of outbreaks provided in the bibliography. References about these microorganisms and pools may be found in the bibliography. Some examples of microorganisms that will survive and/or reproduce in pools and infect swimmers are listed below.

- *Escherichia coli* O157
- Norwalk viruses
- *Pseudomonas*
- *Shigella*
- *Cryptosporidium*
- *Giardia*

Pool disinfection systems include chemical dispensers for releasing chemicals such as chlorine into pool water, and water filtration and recirculation systems that clean the pool water. Disinfection chemicals are “used up” by reacting with dirt and microorganisms in the pool, and by volatilizing into the air. If disease microorganisms (pathogens) are present in the pool, and conditions are right for growth (warm temperatures and low or no concentrations of disinfection chemicals), some types of pathogens will grow in the pool. The Pool Code specifies disinfection equipment that will provide adequate disinfection under most, but not all circumstances. Overloading the pool with swimmers and associated dirt, feces, and body oils can overwhelm disinfection systems. That is why even public pools can have outbreaks. In addition, certain pathogens such as *Cryptosporidium* and *Giardia* are resistant to chlorine at levels normally used in pools.

Residential pools vary greatly in terms of how effectively they can be cleaned and disinfected. Cleaning and disinfection of these pools depends on design features which affect concentrations of disinfection chemicals, and “turnover” rate for regeneration of disinfection capacity in the pool water. Not all residential pool disinfection systems are equally robust, and generally the more sophisticated the pool disinfection system, the greater the capacity to kill pathogens in the pool and provide protection. That is, a relatively sophisticated residential pool with a chemical feeder, bottom drains, skimmers, filters and recirculation system may be able to disinfect water for swimmers more effectively and for a longer time period than a less sophisticated unfiltered pool where chemicals are added by hand, and mixed in physically. When disinfection systems are overloaded by swimmer use or dirt in the pool, pathogens may grow, and swimmer contact with pathogens can result in disease. The requirements in the Pool Code for disinfection and recirculation systems are based on a certain maximum pool capacity. Changing the standards for pool water disinfection systems from the current Pool Code may create regulations that don’t address pool capacity or “use rate,” and thereby increase the risk of failure of a disinfection system leading to disease transmission. Public pool construction methods and equipment allow

for complete daily cleaning and removal of contaminants within the pool.

It is also important to note that individuals most at risk for disease transmission in pool water are small children (particularly those prone to putting their hands in their mouth or to swallowing pool water⁴) and individuals with compromised immune systems. The individuals most likely to release bodily wastes that may contain pathogens (e.g. diarrhea) are also small children. Finally, children tend to be less diligent in showering prior to pool use or washing their bodies to remove body oils and feces, which can wash off in a pool and use up disinfection capacity.

In 2000, hundreds of cases laboratory-confirmed infectious diseases were reported to the Minnesota Department of Health, including 1,227 persons with *Giardia*, 1,079 with *Campylobacter*, 904 with *Shigella*, 612 with *Salmonella*, 216 with *E. coli* O157, 197 with *Cryptosporidium*, and 197 with viral hepatitis A. In reality, laboratory-confirmed infections with the above pathogens represent only the “tip of the iceberg”. The actual number of cases was likely 10 to 40 times greater than reported laboratory confirmed infections (depending on the pathogen). Many infections are self-limited, but hospitalization rates for most of these pathogens are between 10% and 30%.

For each of the pathogens listed above, preschool age children comprise one of the most heavily affected age groups (e.g., 32% of cases for *Shigella*, 30% for *Cryptosporidium* in Minnesota in 2000). We typically identify numerous outbreaks due to enteric pathogens in childcare situations each year, and 2000 was no different. In 2000, 24 outbreaks of shigellosis, 2 of salmonellosis, 2 of *E. coli* O157 infection, and one of giardiasis in childcare settings were identified.

For each of the pathogens listed above, water is an efficient vehicle for transmission. In 2000, six swimming related outbreaks were identified, including four due to *Cryptosporidium*, one due to *Shigella*, and one due to both *Cryptosporidium* and *Shigella*. The venues for these outbreaks included swimming beaches (n=3), a camp swimming pool (n=1), a hotel swimming pool (n=1), and a community swimming pool (n=1). One outbreak of cryptosporidiosis at a swimming beach resulted in at least 220 cases; diaper aged children were thought to be the source of contamination.

The potentially severe consequences of *E. coli* O157 in child care settings was illustrated in 2001 with two deaths of preschool aged children in Minnesota due to hemolytic uremic syndrome (a complication of *E. coli* O157 infections); each of these cases were part of *E. coli* O157 outbreaks in child care settings.

⁴ “Pools Pose Another Safety Concern: Germs”

<http://my.webmd.com/content/article/2789.188>

“What You Should Know About... Giardiasis in the Child Care Setting”

<http://www.cdc.gov/ncidod/hip/abc/facts16.htm>

In summary, enteric infectious diseases are very common in Minnesota, especially in preschool aged children. The consequences of these diseases frequently involve hospitalization, and occasionally death. Due to the prevalence of children attending child care in Minnesota, it is a given that children bring these infectious agents into child care settings on a routine basis. Water is an efficient vehicle for transmission of enteric pathogens. Any lessening of pool standards for childcare facilities in Minnesota likely would markedly increase the risk of infectious disease transmission in these facilities.

In selecting a new lower standard for child care pools, it may be necessary to mandate pool capacity and use rate depending on each residential pool type. The regulatory question for a change in standards is, who would decide on pool capacity and use rate on a case-by-case basis, if anyone?

Drowning and Near-Drowning Injury

Primary factors in risk of drowning and near-drowning injury for children are access to pools and supervision. Drowning or injury can occur within minutes for children. There was a drowning at a child care facility in Minnesota in summer 2001, where the child slipped away from supervision and drowned in a nearby lake.

The following information is taken from the U.S. Consumer Product Safety Commission publication "How to Plan For the Unexpected - Preventing Child Drownings,"⁵

"In some of the nation's sunbelt, drowning has been the leading cause of accidental death in the home of children under 5 years old. The information below can help parents and caregivers provide young children with the protection they deserve.

Each year, nationwide, more than 300 children under 5 years old drown in residential swimming pools, usually a pool owned by their family. In addition, more than 2,000 children in that age group are treated in hospital emergency rooms for submersion injures.

Medical costs for submersion victims during the initial hospitalization alone can be quite high. Costs can range from an estimated \$2,000 for a victim who recovers fully to \$80,000 for a victim with severe brain damage. Some severely brain damaged victims have initial hospital stays in excess of 120 days and expenses in excess of \$150,000.

Many communities have enacted safety regulations governing residential swimming pools -- inground and aboveground. It's up to parents to comply with these regulations.

⁵"How to Plan For the Unexpected - Preventing Child Drownings," U.S. CONSUMER PRODUCT SAFETY COMMISSION, Washington, DC 20207, (301) 504-0580, CPSC Document #359

Apart from these laws, parents who own pools, can take their own precautions to reduce the chances of their youngsters accessing the family pool or spa without adult supervision.

*** FACTS AND FIGURES ***

Following are just a few facts uncovered by the U.S. Consumer Product Safety Commission (CPSC) in a comprehensive study of drowning and submersion incidents involving children under 5 years old in Arizona, California, and Florida.

- * Seventy-five percent of the submersion victims studied by CPSC were between 1 and 3 years old; 65 percent of this group were boys. Toddlers, in particular, often do something unexpected because their capabilities change daily.
- * At the time of the incidents, most victims were being supervised by one or both parents. Forty-six percent of the victims were last seen in the house; 23 percent were last seen in the yard or on the porch or patio; and 31 percent were in or around the pool before the accident. In all, 69 percent of the children were not expected to be at or in the pool, yet they were found in the water.
- * Submersion incidents involving children usually happen in familiar surroundings. Sixty-five percent of the incidents happened in a pool owned by the child's family and 33 percent of the incidents happened in a pool owned by friends or relatives.
- * Pool submersions involving children happen quickly. A child can drown in the time it takes to answer a phone. Seventy-seven percent of the victims had been missing from sight for 5 minutes or less.
- * Survival depends on rescuing the child quickly and restarting the breathing process, even while the child is still in the water. Seconds count in preventing death or brain damage.
- * Child drowning is a silent death. There's no splashing to alert anyone that the child is in trouble.”

The following website is a link to this and other related articles:

<http://www.cpsc.gov/sitemap.html>

This information helps illustrate that the presence of pools in proximity to children creates a risk factor. There are other factors in pool design and construction that can help limit these risks, which should be considered if alternative child care pool requirements are developed.

Pool Safety

There are a number of key issues related to pool safety covered in the Pool Code, which should be addressed if modified regulations are proposed for child care pools. At a minimum this includes the following items:

Safety factors

- Access to pool (stairs, ladders, etc.)
- Drain requirements to prevent hair entrapment and disembowelment
- Fencing to control access
 - Height (top and bottom)
 - Gates
 - Fence openings
- Ropes in pool to separate shallow from deep ends
- Water depth
- Hooks, life rings, etc.
- Pool bottom slope
- In-ground vs. above-ground construction
- Phone for emergency
- Signage
- Rules of behavior

Lifeguard and supervision - ratios of kids to adults

The current Pool Code provides minimum standards intended to limit risks related to certain design factors. For example, pool bottoms with steep drop offs can be a risk to non-swimmers who inadvertently get into deep water. Pool Code requirements limit slope angle to reduce this risk. Above-ground pools pose a somewhat higher risk for drowning than below-ground pools because visibility is blocked by pool walls, increasing the likelihood of a delay in discovering unsupervised pool use, or pool users in trouble. Also, pool drains can trap hair if not properly shielded. Many drownings have occurred because of hair entrapment. Fencing may be the biggest factor, however, in controlling unsupervised access to the pool.

In summary, while pools provide positive activities and the opportunity for instruction for children, they unfortunately also create risks of drowning and near-drowning injury. Lesser standards for any of the factors that contribute to risk of drowning or injury increase the likelihood of such an event.

Swimming Instruction for Young Children in the Child Care Setting

There was discussion at the child care pool meeting on October 18, 2001, on the benefits of swimming instruction for children, and the benefits of participating in water activities while in the child care setting. All participants agreed in the fun and value of water-related activities. However, age-appropriate activities were not discussed, nor specifics on types of activities engaged in at child care facilities. In that regard, the American Academy of Pediatrics released the following press release in the summer of 2001 on swimming lessons for children under the age of four:

“CHICAGO - Children are not developmentally ready for formal swimming lessons until after their fourth birthday, states an updated policy from the American Academy of Pediatrics (AAP). According to the AAP, drowning is a leading cause of unintentional injury and death in the pediatric age group. In the United States, drowning rates are highest among toddlers ages 1 through 2 years old. In Arizona, California, Florida, and Texas, drowning is the leading cause of unintentional injury and death in this age group. While an estimated 5 to 10 million infants and preschool children participate in aquatic programs, these should not be promoted as a way to decrease the risk of drowning, the AAP says. It also says parents should not feel secure that their child is safe in water or safe from drowning after participating in an aquatic program. "Whenever infants and toddlers are in or around water, an adult should be within an arm's length, providing 'touch supervision,'" the AAP says.”⁶

As a guide for instructor/student ratios, the American Red Cross recommends the following age-dependent ratios for swimming instruction:

infants (6 mos - 3 years) must be with a parent
6-8 parent child pairs /instructor

3-5 years old (without a parent): if shallow water for child, then 4-6 children per instructor and 8-10 students per instructor with an aide; if chest deep water for child, then 4-5 children per instructor; over chest deep water, then 6-8 children / instructor with an aide.

school age: up to 10 students per instructor, if there is an aide, then more than 10 students

Many other states specify an instructor/student ratio for young children in lessons at licensed child care facilities. At present, Minnesota has no such requirements.

⁶ “AAP: SWIMMING LESSONS NOT RECOMMENDED UNDER AGE FOUR,” American Academy of Pediatrics press release, For Release: April 3, 2000, 1:00 p.m. (ET), <http://www.aap.org/advocacy/archives/aprswim.htm>

Compliance Monitoring

Currently, the Minnesota Department of Health (MDH) is responsible for reviewing and inspecting public pools during construction, including those at licensed child care facilities, (MN Rules ch. 4717). MDH pool plan review and construction inspection is paid for by fees paid by the pool owner, and MDH involvement with these pools ends after construction approval, except for complaint investigation. Minnesota Department of Human Services (DHS) requirements on child care pools are found in Minnesota Rules Chapter 9502.0425, Subd.3 :

Subp. 3. Water hazards. Swimming and wading pools, beaches, or other bodies of water on or adjacent to the site of the residence must be inaccessible to children except during periods of supervised use. Wading pools, as defined in chapter 4717, must be kept clean. When children use a swimming pool, as defined in chapter 4717, or beach, an attendant trained in first aid and resuscitation shall be present. Any public swimming pool, as defined in chapter 4717, used by children must meet the requirements of chapter 4717.

There are currently no state or county programs or fees specifically for monitoring child care pool operation and maintenance after construction. Pool inspections may be carried out as a part of the annual inspection of the facility by licensing agency staff. To be effective, pool inspections must be done while the pools are in operation. These pool were originally included in the Pool Code as public pools because of health and safety problems identified in the past.

An exemption for family and group family child care pools would eliminate responsibility and costs of regulation of pool construction and operation, but not provider or licensing agency liability for injury or death caused by pool use during child care. Liability is discussed below.

Liability

This is a very significant issue to child care licensing agencies. Under present law, both the care provider and state and county child care licensing agencies may be held liable for harm to an individual at a licensed child care facility. Reducing the standards for health and safety protection at pools may increase the risk of harm. Correspondingly, increasing risk of harm increases risk of liability for damages. House File 1832 does not address the issue of liability, and no change to present tort laws is proposed by that bill. Failure to address this issue puts the state and counties at risk for increased claims for damages. Costs for near-drowning injury are provided above (see section on Drowning and Near-drowning Injury). Damage claims for hospitalization due to disease transmission, or claims for deaths caused by infectious diseases can also be substantial.

Claims for damages to a licensed child care provider for death or injury may be catastrophic.

Additional Factors to Consider

Changing the rules for licensed family and group family child care facility pools may spark requests from other owners of public pools for relaxed standards. This may result in additional evaluations as requests develop.

Discussion on Alternative Pool Requirements, Article 12 of House File 1832

The present language found in House File 1832, Article 12 has provisions for parental consent and for provider training, but no specific provisions regarding pools and their operation. There is a requirement that the provider's pool "meets several other requirements relating to maintaining the health and safety of children using the swimming pool." If there are requirements set elsewhere, this implies that compliance with these requirements be checked by the regulating agency. If there are to be requirements for health and safety protection placed in the statute other than complying with the requirements of Minnesota rules Chapter 4717, it is recommended that the following issues be addressed:

- Type of pool liner
- In-ground vs. above-ground pool
- Pool depth
- Safety equipment
 - Signage
 - Access (stairs, ladders, etc.)
 - Fencing
 - Height (top and bottom)
 - Gates
 - Fence openings
 - Ropes in pool
 - Hooks, life rings, etc.
 - Phone for emergency
 - Rules of behavior
 - etc.
- Lifeguard and supervision - ratios of kids to adults
- Operator training (covered in H.F. 1832)
- Sick kids and pool use, especially diarrhea
- Filtration
 - Turn-over rate
 - Drains and grates (water movement, disembowelment risk)
- Disinfection
 - Monitoring pool chemistry
 - Frequency
 - Parameters
 - "Shock" treatments
 - Pool cleaning

- Electrical equipment and power to pool equipment -- safety
- Inspections
 - Fees
 - Qualified staff (County or DHS?)
 - Frequency of Inspections
 - Parental consent forms (covered in H.F. 1832)
- Liability
 - Provider policies
 - State and County liability (tort laws)

There is a wide variety of approaches nationally, from more to less restrictive than Minnesota's regulations. The following website provides access to other states requirements on pools:

“Individual States’ Child Care Licensure Regulations,” National Resource for Center for Health and Safety in Child Care, <http://nrc.uchsc.edu/index.html> (search on “pool”)

Some states have relatively few requirements on pool design, others require compliance with the state's pool code. A number of states specify an instructor/swimmer ratio. Minnesota's current requirements are neither the most restrictive nor the most lenient.

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- i. American Academy of Pediatrics: "Swimming Lessons Not Recommended Under Age Four,"
<http://www.aap.org/advocacy/archives/aprswim.htm>
- ii. Kids in the Water –
<http://my.webmd.com/content/article/1739.50359>

b. Disease transmission in swimming pools

i. General information on outbreaks at pools

- (1) Center for Disease Control reports on outbreaks - homepage
http://www.cdc.gov/healthyswimming/rwi_pub.htm
- (2) Highlight On: Recreational Water Illnesses - Center for Disease Control
<http://www.cdc.gov/ncidod/dpd/highlight2/index.htm>
- (3) "Surveillance for Waterborne-Disease Outbreaks --- United States, 1997--1998,"
<http://www.cdc.gov/mmwr//preview/mmwrhtml/ss4904a1.htm>
- (4) Center for Disease Control: This website provides information for raising awareness about the spread of recreational water illnesses (RWIs). Learning about healthy swimming behaviors may help protect swimmers from the spread of illness. More than 15,000 swimmers became ill from swimming during the past decade.
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- (5) Pools Pose Another Safety Concern: Germs
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<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5020a4.htm>
- (7)

ii. *Escherichia coli*

- (1) "Outbreak of *Escherichia coli* O157:H7 infections associated with a waterpark." Georgia Epidemiol Report 1998;14:1-2
- (2) "*Escherichia coli* O157:H7 Outbreak Associated with an Improperly Chlorinated Swimming Pool." Clinical Infectious Diseases 1999:298-303

iii. Norwalk-like Viruses

- (1) Public Health Consequences and Outbreak Management
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5009a1.htm>

iv. *Pseudomonas*

- (1) *Pseudomonas* Dermatitis/Folliculitis Associated With Pools and HotTubs, Colorado and Maine, 1999-2000

<http://jama.ama-assn.org/issues/v285n2/ffull/jwr0110-1.html>

- v. ***Shigella***
 - (1) “Shigellosis Outbreak Associated With an Unchlorinated Fill-and-Drain Wading Pool --- Iowa, 2001”
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5037a1.htm>
- vi. ***Cryptosporidium***
 - (1) “Protracted Outbreaks of Cryptosporidiosis Associated With Swimming Pool Use --- Ohio and Nebraska, 2000”
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5020a3.htm>
- vii. ***Giardia***
 - (1) “What You Should Know About... Giardiasis in the Child Care Setting”
<http://www.cdc.gov/ncidod/hip/abc/facts16.htm> - This includes a recommendation against use of wading pools in child care settings

c. Drowning and Near-drowning Injuries

- i. National Center for Injury Prevention and Control – Most children drown in swimming pools. According to the U.S. Consumer Product Safety Commission (CPSC), emergency departments reported that among children younger than 5 years old, about 320 fatal drownings in 1991 and nearly 2,300 non-fatal near-drownings in 1993 occurred in residential swimming pools. Between 60-90% of drownings among children aged 0-4 years occur in residential pools; more than half of these occur at the child's own home. Compared with in-ground pools without four-sided fencing, 60% fewer drownings occur in in-ground pools with four-sided isolation fencing. <http://www.cdc.gov/ncipc/factsheets/drown.htm>
- ii. “Drowning in Infants, Children, and Adolescents.” *Pediatrics*, Vol. 92 No. 2, August 1994.
- iii. “Where Children Drown, United States, 1995,” *Pediatrics*, Vol. 108 No. 1 July 2001.
- iv. “How to Plan For the Unexpected: Preventing Child Drownings.” U.S. Consumer Product Safety Commission, Washington, DC 20207, (301) 504-0580, CPSC Document #359
<http://www.cpsc.gov/cpsc/pub/pubs/359.html>
- v. American Academy of Pediatrics - NEW STUDY FIRST TO GATHER NATIONAL DATA ON WHERE CHILDREN DROWN
<http://www.aap.org/advocacy/archives/julydrown.htm>
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- viii. “Drownings in Minnesota, 1980-85; a population-based study.” *American Journal of Public Health*, 1990.
- ix. “Hospitalizations for near drowning in California: incidence and costs.”

American Journal of Public Health, 1995.

- x. Consumer Product Safety Commission -- “How to Plan For the Unexpected: Preventing Child Drownings,” CPSC Document #359
In some of the nation's sunbelt, drowning has been the leading cause of accidental death in the home of children under 5 years old. The information below can help parents and caregivers provide young children with the protection they deserve.

Each year, nationwide, more than 300 children under 5 years old drown in residential swimming pools, usually a pool owned by their family. In addition, more than 2,000 children in that age group are treated in hospital emergency rooms for submersion injuries.

Medical costs for submersion victims during the initial hospitalization alone can be quite high. Costs can range from an estimated \$2,000 for a victim who recovers fully to \$80,000 for a victim with severe brain damage. Some severely brain damaged victims have initial hospital stays in excess of 120 days and expenses in excess of \$150,000.

<http://www.cpsc.gov/cpsc/pub/pubs/359.html>

- xi. “Risk of Drowning: An Iceberg Phenomenon,” *JACEP*, 1977 - notes that the rate of near-drowning injury is 13 times that of actual drowning.

2. Key Agencies for Pool-related Health and Safety Information

- a. Center for Disease Control, <http://www.cdc.gov/>
- b. Consumer Product Safety Commission, <http://www.cpsc.gov/>
- c. National Spa & Pool Institute, http://www.nspi.org/consumer_info2.html
- d. National Safety Council, <http://www.nsc.org/>

3. References for Pool Construction and Operation

- a. “Individual States’ Child Care Licensure Regulations,” National Resource for Center for Health and Safety in Child Care, <http://nrc.uchsc.edu/index.html> (search on “pool”)
- b. “Recommended Standards for Swimming Pool Design and Operation.” Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1996 Edition.
- c. “Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.” National Sanitation Foundation International Standard 50. 1996 (2000 edition available).
- d. National Health & Safety Performance Standards Guidelines for Out-of-Home Child Care Programs for swimming, wading and water at the following website: <http://nrc.uchsc.edu/national/5-4.html#wq>.

Pertinent language from Article 12 of the Omnibus Health and Human Services Finance bill, H.F. 1832, April 30, 2001:

Article 12: Miscellaneous
Overview

This article makes changes to a variety of health and human services-related statutes. Provisions in this article:

Establish licensing requirements for family day care and group family day care providers to allow children in care to use swimming pools located at the day care homes (sections 1 and 2).

Modify requirements relating to public guardianship and require the commissioner of human services to provide county agencies with funds for public guardianship alternatives based upon county proposals to establish private alternatives (sections 4 to 10, 12 and 14).

Require that \$6,000,000 each biennium be transferred from the shared services account to the general fund (section 3).

Delay until June 30, 2005, the sunset date for the council on disability (section 11).

1. Pools at family day care or group family day care homes. Amends § 144.1222, by adding subd. 2a. Provides that a swimming pool located at licensed family day care or group family day care home is not a public pool and is exempt from the regulatory requirements for public pools. Requires that a provider meet the licensing requirements in section 245A.14, subdivision 10 (section 2 of the bill), if the provider chooses to allow children cared for at the family day care or group family day care home to use the pool located at the home.
2. Swimming pools; family day care and group family day care providers. Amends § 245A.14, by adding subd. 10.

(a) Provides that a family day care or group family day care provider is eligible to allow a child in care to use a swimming pool located at the day care home if the provider has not had a licensing sanction or correction order or fine relating to the supervision or health and safety of children substantiated during the prior 24 months and the provider satisfies the following requirements:

- obtains annual written consent from a child's parents or legal guardian allowing the child to use the pool. The written consent must include materials from the department of health regarding the risk of disease and other health risks associated with swimming pools and a statement that the department of health and county will not monitor or inspect the provider's swimming pool to ensure compliance with the licensing requirements in this section;

- enters an annual written contract with a child's parents or legal guardian that specifies that the provider agrees to perform all requirements in this section;
- attends and successfully completes a pool operator training course once every five years. Specifies acceptable pool training courses;
- requires a caregiver trained in first aid and child cardiopulmonary resuscitation to supervise and be present at the pool with children using the pool; and
- meets several other requirements relating to maintaining the health and safety of children using the swimming pool.
- Provides that the requirements under this subdivision do not apply to portable wading pools or whirlpools located at family day care or group family day care homes.

(b) Provides that a violation of the licensing requirements in this section is grounds for a sanction or correction order or fine. Prohibits a provider from continuing to allow children in care to use the pool located at the day care home if the provider receives a licensing sanction or correction order or fine relating to the supervision or health and safety of children in care.