



#### TIPS for best pool operations:

Most states require pools and spas to maintain a minimum parts per million (PPM) of chlorine or bromine in the water. State codes vary but best practices suggest 1.5 to 2.5 PPM Chlorine. Most viruses are killed after 30 to 60 minutes exposure to 1.0 chlorine.

"The secret of  
**CHANGE**  
is to focus all of  
your energy not on  
fighting the old, but  
on building the new."  
-SOCRATES

#### Education –

- Stay informed about COVID-19 recommendations and fact-based evidence.
- Obtain (or conduct) virtual training as much as possible for continuing educational and professional development.
- Update or obtain certifications
- Establish a systematic risk management process: eliminate, control, warn
- Plan and prepare
- Risk assessments: operating procedures, EAP's through the airborne and contact transmission lens for PATRONS and STAFF and SELF. Review and update operating procedures, documents, manuals, contracts, etc.
- Signage and informational documents (what you are doing, what is expected)
- Equipment and supplies ordering – especially PPE and cleaning supplies.

New Signage – ***“Per CDC recommendations, if you or anyone in your household is experiencing symptoms of COVID-19 (fever, cough, shortness of breath, chills, muscle pain, headache, sore throat, new loss of taste or smell), you should stay home until the CDC’s published isolation criteria are met.”***

#### Identifying the Enemy -

- Cryptosporidiosis: Parasite is resistant to germicides and bactericides and can live in the pool water for up to a week; highly contagious; transmitted by swallowing water and people contact; causes dehydration, weight loss, stomach cramps, fever nausea and vomiting; no treatment.
- Escherichia coli (E-coli): Bacteria controlled by proper chlorination; transmitted by swallowing water; causes bloody diarrhea, abdominal cramps, and kidney failure; treated with antibiotics.
- Giardiasis: Parasite can last less than an hour in a properly chlorinated pool; the cooler the water the longer it can survive; transmitted by swallowing water; causes diarrhea, gas, stomach cramps, nausea and upset stomach; treated with prescription drugs.
- Hepatitis A: Virus is mildly resistant to germicides and bactericides and can live approximately 15 minutes in a properly chlorinated pool; transmitted by swallowing water; causes jaundice, fatigue, loss of appetite, diarrhea, fever, stomach pain; vaccine available but no treatment after the fact.
- Legionnaires' Disease / Pontiac Fever: Bacteria killed in less than a minute in a properly chlorinated pool;

- transmitted by inhaling mist from hot tubs or spray features; not contagious; causes fever, chills, cough, aches, fatigue, diarrhea, kidney malfunction; treatable if diagnosed in time.
- Naegleria Infection: Microbe that enters through nose and affects brain and spinal nerves; (rare) this amoeba lives less than a minute in a properly chlorinated pool; causes meningoenkephalitis; prescription drugs available if immediately diagnosed.
- Norovirus Gastroenteritis: Virus that has a mild resistance to germicides and bactericides and can live approximately 30 minutes in a properly chlorinated pool; transmitted by swallowing water; causes nausea, vomiting, diarrhea, stomach cramps, flu like symptoms; no treatment specified; people usually recover on their own in 48 hours.
- Pseudomonas Dermatitis: Bacteria controlled by proper chlorination; hot tubs and pools; transmitted by direct skin contact with/in water; causes itching, rash, blisters; not contagious; clears up on its own in about 48 hours.
- Salmonellosis: Bacteria controlled by proper chlorination; transmitted by swallowing water; causes diarrhea, fever, cramps; antibiotics available for more serious cases.
- Shigellosis: bacteria controlled by proper chlorination; transmitted by swallowing water; causes diarrhea, fever, cramps; treated with antibiotics.

We recommend 1.5 PPM to allow for times the CL may drop during the day. We also do not recommend chlorine PPM ever go over 3.0. Only so much chlorine can activate in a specific amount of water. Extra chlorine can “lock-up” and keep activated chlorine from working properly. The pool will now have chloramines which makes the indoor pool room air hard to (and unhealthy) breath. Run the pool at 1.5 ppm CL and 7.4 pH. DO NOT shock pool unless you have a confirmed issue with a bacteria like E-coli.

#### **General Information -**

The pool recirculation pump(s) remain operational 24/7 in the event of a facility closure. Where it is permissible per local/state code, the system may be turned down to 75% of the designed flow rate, should the system be able to accommodate such a reduction. Refer to the Model Aquatic Health Code, paragraph 4.7.1.10.5.

Ensure the minimum disinfectant residuals, per local/state code, are maintained within the pool during these periods when the pool is unoccupied. If the pool typically maintains a 2.0 or 3.0 ppm residual in the pool, it may be reduced to 1.0 ppm, if allowed per local/state code.

For indoor pools, the HVAC/DX system should remain operational to maintain the natatorium at a negative pressure relative to adjacent spaces

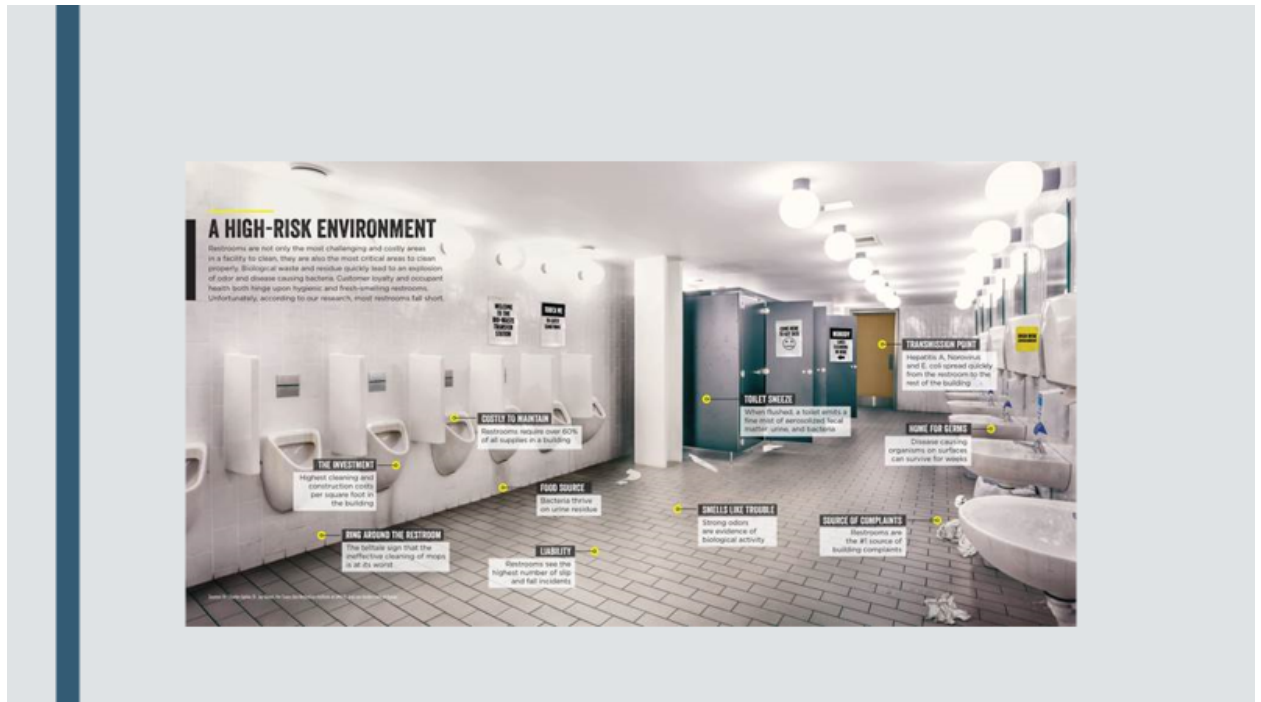
A certified pool operator should inspect the pool and its related systems at least once per day. Chemical quantities should be inspected and procured, as needed. The filter may also require backwashing, especially if the pool is outdoors, depending on the loading and type of filter system.

The facility should be secured to prevent public access.

Prior to the pool being re-opened to the public, the certified pool operator will need to do a full inspection of the mechanical and chemical treatment systems as well as the water quality.

Clean all surfaces according to facilities established protocols. Some areas may need hourly cleaning. Surfaces include every place that people touch. Door handles, vending machines, tables & chairs,

counter tops, fixtures, etc. DO NOT use any cleaning solutions that contain ammonia or nitrogen compounds. This applies to the entire building.



Lockers can pose a different challenge. Suggest you spray disinfect all public lockers after every use which will line up well with spraying bathroom fixtures and areas. Private rental lockers can be sprayed on outside and you can supply a can of spray for individuals to spray the inside of their locker.

### Cleaning – Best for combating virus:

- Clorox Commercial Solutions Disinfecting Bio Stain & Odor Remover
- Clorox Pet Solutions Advanced Disinfecting Stain & Odor Remover
- Lysol Hydrogen Peroxide Action Multi-Purpose Cleaner, Oxygen Splash
- Lysol Hydrogen Peroxide Bathroom Cleaner, Cool Spring Breeze
- Lysol Hydrogen Peroxide Multi-Purpose Cleaner, Citrus Sparkle Zest
- Lysol Hydrogen Peroxide Multi-Purpose Cleaning Wipes, Oxygen Splash
- Lysol Power Bathroom Cleaner, Island Breeze
- Purell Multi Surface Disinfectant, Fragrance Free
- Seventh Generation Disinfectant Spray, Eucalyptus, Spearmint & Thyme
- Seventh Generation Disinfectant Spray, Fresh Citrus & Thyme
- Seventh Generation Disinfectant Spray, Lavender Vanilla & Thyme
- Seventh Generation Disinfecting Bathroom Cleaner, Lemongrass Citrus Scent
- Seventh Generation Disinfecting Multi-Surface Cleaner, Lemongrass Citrus Scent
- Seventh Generation Disinfecting Wipes, Lemongrass Citrus Scent

- Windex Multi Surface Disinfectant Cleaner
- Windex Multi Surface Disinfectant Cleaner, Glade Rainshower

Safer active ingredients:

- Hydrogen peroxide
- Ethyl alcohol (ethanol)
- Citric acid
- L-lactic acid
- Caprylic acid (octanoic acid)
- Thymol

When considering a product, read the labels and be on the lookout for these ingredients that may be best to avoid.

**Sodium hypochlorite:** EWG notes that this is "linked to harm to the skin and respiratory system and the environment. When improperly mixed with other cleaners or acids, sodium hypochlorite can be fatally poisonous." It is also found in chlorine bleach.

**Quaternary ammonium compounds:** Also known as quats, which, according to EWG, are linked to asthma and suspected of causing reproductive toxicity and birth defects in humans. They also take an environmental toll.

**Hydrogen peroxide and vinegar mixed together:** the combination forms caustic peracetic acid.

No cleaning products used in or around a pool should contain ammonia. This causes pool-water quality issues.

### Pre-opening site-specific training

- New policy/procedure/expectations – if it's not in writing it is not a policy or procedure.
- Making sure everyone is on the same page and consistent – explain the why and the how
- Virtual or live small groups
- On-going risk assessments
- How are things going? Are there new risks? What are any unintended consequences and can these be reduced?
- Engagement - How can we continue to thrive and deliver?
- What new skills do you have and how can you use them?
- Implementation plan / re-educate clients/members
- New members orientation / back to basics

### Considerations-

- Business model – how do you sustain staff without government support?
  - Plan for the unknown
  - Build cash reserves

- Offer alternate programming
- Sustainability – How do we handle smaller crowds but maintain revenue
  - Private experiences need to have a higher value
  - Can we utilize historically underutilized times?
  - Do we need to offer smaller classes to spread people out?
  - Limit to crowds of 50?
  - Renewed focus on risk assessment methods, implementation, documentation
  - Training and information delivery – online/virtual is here to stay
  - Plan for keeping up with technology and resources
  - Information and content sharing
  - Develop a way to cut through the clutter and poor-quality information
  - Emergency care
  - How will CPR and first aid change?
  - Will the role of the lifeguard change due to exposure concerns? Will this be practical/manageable to keep facilities open?

Deciding the risk-reward for operating – being clear on who’s responsibility this is. Some decisions may be out of your hands. Accept and control what you can.

- Program Delivery
- Educate clients/participants how to keep moving with a changed program
- Personal training, small group training
- Use of technology within the facility and out to keep members connected
- Continuing Education and Team Building
- Plan for keeping up with technology and resources
- Build a team that grows together and can adapt to new situations

**Swim Schools Short Term** - Consider a programming model that promotes “social distancing”

- lower ratio of students to instructor
- stagger class start and end times so fewer people in shower rooms together e.g. Group A starts at 9AM in water Group B starts at 9:10AM, Group C starts at 9:20AM etc.
- Shorten class times from 30 minutes to 20 or 15 minutes
- Divide pool up into zones using lane lines
- If your pool filter system can handle it; have students come in their swim suit and leave in their swim suit so bypass most time in shower room. *This is temporary.*



- If you have deck rinse stations, have students use those before getting in pool
- Hand out educational flyers about what you are doing to ensure a safer environment:
  - personal-distancing,
  - class schedules and pool zones,
  - disinfection procedures, etc.
  - Pool signage is also suggested

**Swim Practice - Short Term** - Consider a programming model that promotes “social distancing”. Examples are set starting and ending places in pool. Our concern is not what happens during actual swimming but rather what goes on during rest intervals.





### Social Distancing Practice Layout

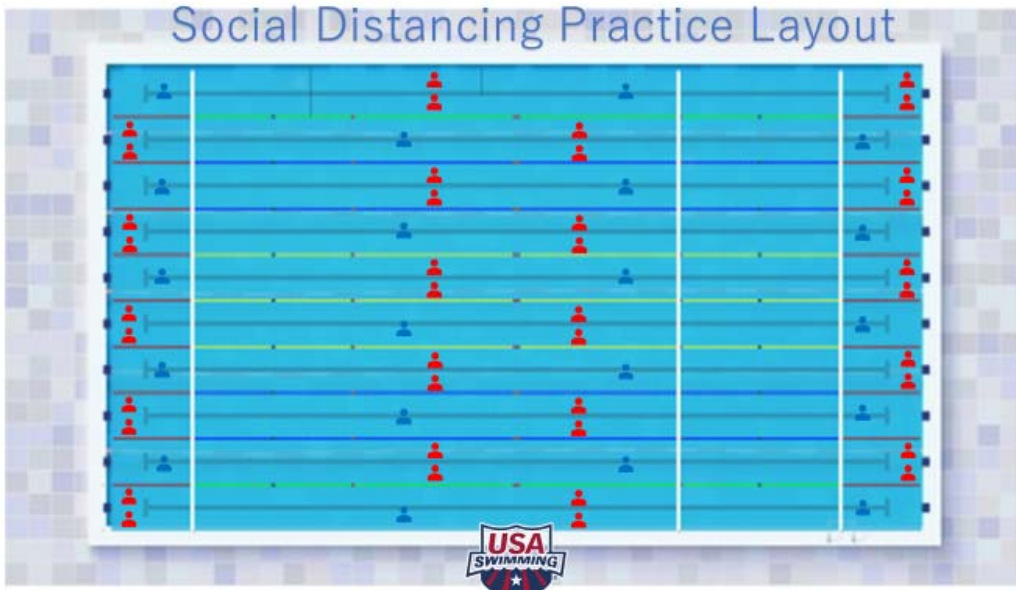


25 yard – 6 Lane Pool (27 swimmers)

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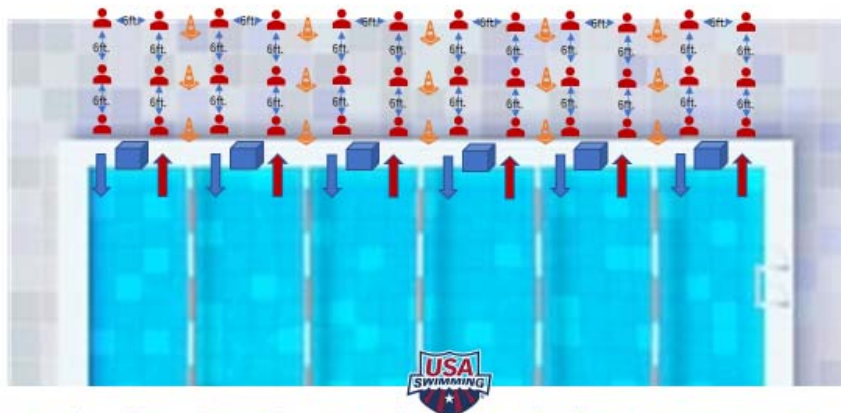


25 yard – 6 Lane Pool (27 swimmers)



50 meter– 8 Lane Pool (60 swimmers)

### Social Distancing Practice Layout



25 yard –On Deck sit down slide in sets in circles

- Swimmers maintain 6 feet apart – mark deck with 2" wide colored duct tape
- Sit down/Slide in to enter water
- End of set climb out and go to assigned spot
- The more "eyes" on deck the better
- Use cones or other barriers to help with separation – deck needs to be wide enough to comply with 6' personal distancing

**OTHER-**

- Regular maintenance on air handing systems and changing the filters regularly is important for peoples' comfort. Current information is that the Covid19 virus is primarily spread by close contact. It is not is listed as an airborne virus but no one seems to be sure. It is unlikely that the indoor pools HVAC systems would spread the virus, but this is not confirmed by research. Best practices would be to circulate as much fresh air from outside as possible.



- Foot traffic and pool user numbers..... Social distancing will be with us for a while, and possibly with us from now on in some form or other. There are many areas in aquatic facilities that need to be monitored and have policy and procedure controls in place. Our policies for these areas will certainly need to be changed.
  - Vending and public lobby areas
  - Registration desk
  - Hallways leading to exercise areas – possibly directional lanes like streets
  - Shower rooms and rest rooms – signage for areas and limit numbers
  - Pool lanes or specific exercise areas – control numbers and social distancing
  - Hot tubs – one at a time
  - Slide and diving board staging areas – social distancing
  - Entry ways, conference rooms, etc.
  - Concession areas

**Some protocols:**

- Pre-opening cleaning
- Start-up equipment, give time to make sure things are working
- Full facility cleaning and disinfection
- Water management program for stagnant systems (bacteria testing)
- On-going cleaning protocols
- New hourly or periodic disinfection checklists for ANY hard surface.
- Tables, chairs, lounges, lifeguard stands, etc.
- Frequent hand washing thoroughly with soap and water for at least 20 seconds or an alcohol-based hand sanitizer that contains at least 60 percent alcohol
- Avoid touching eyes, nose and mouth
- Cover sneezes or coughs with tissues, if possible, or else with a sleeve or shoulder
- Avoid close contact with people who are sick
- Stay home when sick
- Clean and disinfect frequently touched surfaces and objects
- Better documentation and transparency to public comfort
- User involvement
- User provide their own personal training equipment
- Clean general use equipment before and after use

Aquatic exercise equipment and team equipment needs special attention. The floats and belts and kick boards and noodles, etc. need to be disinfected after use. You will need a spray bottle with a solution of 1 part Clorox (Bleach) to 3 parts water. Spray equipment and let set for 30 minutes, Rinse over drain with hose.



### Program Delivery-

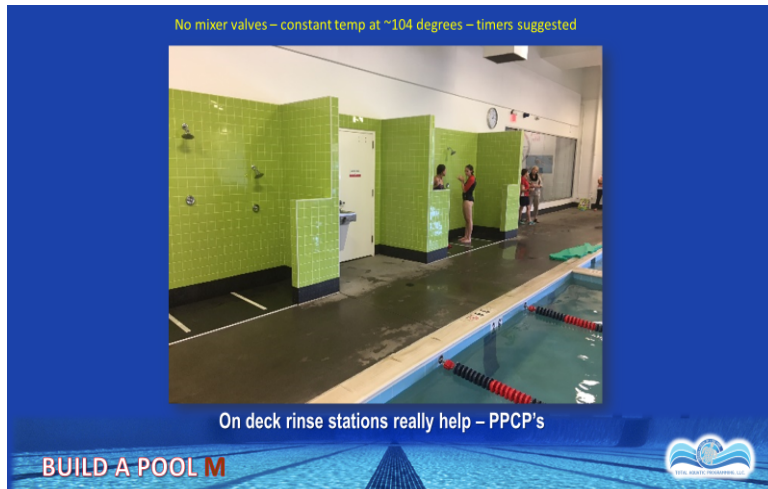
- Educate clients/participants how to keep moving
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We will spend a lot of time with the pool water chemistry as our first line of defense. We also need to be extra aware of the other part of safe water – filtration and circulation.

- If you have medium pressure UV, check your UV bulbs, wipers, and quartz chamber. Bulbs start losing their effectiveness after 10 to 12 months. UV units that are well maintained destroy many viruses. Make sure the unit is at maximum efficiency.
- Check pump hair strainer baskets more frequently
- Is your filter operating at best efficiency? Sand needs to be cleaned yearly and replaced every 4-5 years. Cartridge filters need to be cleaned and replaced more frequently. DE filters need to be checked for “bag or sleeve” condition. All filters will need to be closely monitored and possibly cleaned more often.
- Chemical feeder system. Make sure all valves and lines are cleaned and flowing freely. Make sure all sensors are functioning properly. Do you have replacement parts for your equipment on hand?
- Check automatic pool vacuums and facility cleaning equipment. The equipment used to vacuum land areas of facility will need to be sanitized after each use.

One of the most important things pool-users can do. *Shower before entering pool.* If you have deck showers this is an advantage for social distancing. Shower stalls in dressing rooms will need to have signage. There is more to showering than virus considerations. We have Personal Care Product (PCP's or PPCP's) chemicals on our body. Many of these 70+ chemicals were not even invented 30 years ago.

Most of them have an adverse effects on chlorines ability to be effective. They are contained in shampoo's, conditioners, deodorants, perfumes, colognes, hair sprays, make-up, lotions, and many other products. A 30 second warm water shower rinse will remove over 70% of these from our body. If a disinfectant soap is used, the bacteria and viral issues can also be addressed. PCP's in pool water can negate the disinfection ability of free chlorine.



CDC has updated two guidance documents on closing and reopening aquatic facilities during the COVID-19 pandemic.

- CDC [guidance on closing hot tubs/spas for extended periods of time](#) has been updated to address aquatics sector feedback related to hot tubs/spas with a plastered finish, which could end up cracking if drained for a prolonged period of time.
- CDC [recommendations on reopening hot tubs/spas and other water systems](#) have been updated to clarify that not every public hot tub/spa needs to be tested for *Legionella* before reopening.

There is no evidence that the virus that causes COVID-19 can be spread to people through the water in pools, hot tubs, spas, or water play areas. Proper operation and maintenance (including disinfection with chlorine and bromine) of these facilities should inactivate the virus in the water. <https://www.cdc.gov/coronavirus/2019-ncov/php/water.html>

While there is [ongoing community spread](#) of COVID-19 of the virus that causes COVID-19, it is important for individuals as well as owners and operators of these facilities to take steps to ensure health and safety:

- Everyone should follow local and state guidance that may determine when and how recreational water facilities may operate.
- Individuals should continue to [protect themselves and others](#) at recreational water venues both in and out of the water – for example, by practicing social distancing and good hand hygiene.

- In addition to ensuring water safety and quality, owners and operators of community pools, hot tubs, spas, and water play areas should follow the [interim guidance for businesses and employers](#) for cleaning and disinfecting their community facilities.

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Be aware! In times like this there are unscrupulous individuals and companies who will advertise they have new chemicals or systems that work better. This happens in any industry in a free-market situation. Buyer Beware. If it sounds too good to be true, double your due diligence efforts.

If you have questions about a specific product or method, please email [mick@totalaquatic.llc](mailto:mick@totalaquatic.llc)

For specific aquatic programming questions [emailsue@totalaquatic.llc](mailto:emailsue@totalaquatic.llc)

[www.totalaquatic.llc](http://www.totalaquatic.llc)



[www.usaswimming.org/buildapool](http://www.usaswimming.org/buildapool)

