

# Stabilized Aqueous Ozone (SAO): A Cleaner Way to Clean

Chatham-Kent Health Alliance & North York General Hospital



**Initiative Goal:** To reduce the use of toxic chemicals in the hospital while protecting the health of patients, staff and visitors.

## The Issue

Hospitals are always looking for ways to reduce their impact on the environment while protecting the health of patients and staff, maintaining long-term financial goals, and increasing day to day efficiency. Switching to Stabilized Aqueous Ozone (SAO) can help achieve all three. SAO, also known as  $O_3$ , is created by passing electricity through water ( $H_2O$ ) and oxygen ( $O_2$ ).  $O_3$  readily gives up its third oxygen atom, oxidizing and killing microbes and breaking down dirt, grease, and other soils. SAO leaves only oxygen and water as byproducts, which are harmless to the environment and safe to dispose of down the drain.



*Amanda Adams, Environmental Services at NYGH, with a Tersano SAO machine*

## Benefits of Ozonated Water

**Environmental:** Replaces toxic chemicals and breaks down to oxygen and water; greatly reduces packaging and waste from chemical purchasing.

**Financial:** Easier on cleaning equipment and floor finishes, allowing both to last longer; replaces a spectrum of cleaning chemicals, resulting in cost savings over time.

**Public Health:** Kills 99.999% of microbes such as *E. coli*, Staph, Salmonella; does not have any odours that may affect sensitive individuals, and increases the slip coefficient of floors by 53%.

**Staff Health:** Housekeeping staff are exposed to fewer toxic chemicals throughout the day. The Material Safety Data Sheet (MSDS) for SAO is 0-0-0, indicating a product safe for use without personal protective equipment.

**Efficiency:** Can be used on multiple surfaces and does not require any measuring or diluting before use, freeing up staff time for other duties; fewer products to purchase, track, invoice, and dispose of.



*Joyce Beaulieu, Housekeeper at CKHA, fills a spray bottle with SAO.*

## Sustainability Strategy Implemented

To generate SAO using regular tap water, a machine such as the Tersano SAO (pictured left) is required. The system can be installed in any cleaning closet near a water source.

It has been four years since both Chatham-Kent Health Alliance (CKHA) and North York General Hospital (NYGH) installed their first SAO machines. Today, NYGH has four units, and CKHA has two. Housekeeping staff at both facilities use SAO to clean floors of all common areas, corridors, stainless steel (e.g. elevators, doors), glass, and Nutrition Services. NYGH says they have reduced use of commercial floor cleaning chemicals by 90%. Staff at CKHA have eliminated the use of glass cleaners and stainless steel spray, and have reduced overall chemical costs by 35%.

## Implementation Process

At CKHA, the team used existing renovations to housekeeping facilities as an opportunity to implement the new system. Having heard about SAO at a conference, they installed a Tersano SAO in one of the cleaning closets where autoscrubbers were already set up. A representative from Tersano came in to host a one-day training for housekeeping personnel, and the new system was up and running. Replacement of cleaning supplies is not necessary; existing equipment can simply be rinsed with SAO and labeled with a ready-made SAO MSDS label.

Patricia Todd, Manager of Environmental Services at North York General, says implementation was simple and well received. Prior to making the switch, NYGH was using a chemical that left a sticky residue on floors, so the change to SAO was welcomed. They even started using SAO to clean their autoclave machines, where it replaced a chemical that left a strong odour.

## Tracking Progress

Cleaning with SAO has been extremely well received by staff at both hospitals. *“Our use of SAO for cleaning floors in our facility has decreased our use of commercial floor cleaning chemicals by approximately 90%. It leaves no odor, no residue, and makes the cleaning of our floor machines much easier,”* says Patricia Todd. Other feedback she’s received indicate floor finishes and equipment last longer due to decreased chemical corrosion.

*“It has become a key component in our ongoing efforts to keep our patients, families and staff safe from exposure to potentially harmful viruses, bacteria, and chemicals.”*  
-Patricia Todd

When asked how her staff like cleaning with the Tersano SAO system, Carrie Sophonow, Manager of Housekeeping and Linen at CKHA says, *“They love it!”* She also notes that the number of slips and falls reported at the hospital has been steadily decreasing since starting to use SAO in 2013.

## Challenges and Lessons Learned

The only maintenance required on the Tersano SAO system is the regular replacement of the cartridge. During the winter months, when floor cleaners are being run twice a day, CKHA says their cartridges require changing every 3-4 days. To ensure that the cartridge is being changed properly and can be returned to the company for recycling, CKHA limits the procedure of changing the cartridges to a few trained individuals. Other housekeeping staff are taught to recognize a cartridge that is running low, and have a protocol in place upon starting a shift to ensure adequate supply remains.

## Next Steps

While high-touch surfaces still currently require a chemical cleaner, NYGH says they anxiously await further studies and reviews of SAO with the hope that one day it will become the standard for use on more surfaces. At CKHA, staff anticipate expansion into other areas as funds become available to purchase additional units.

***Toronto’s North York General Hospital offers acute care, ambulatory and long-term services at three sites: General site, Branson Ambulatory Care Centre and Seniors’ Health Centre. Known as North York General, it is affiliated with the University of Toronto. Chatham-Kent Health Alliance is a 200+ bed community hospital corporation with campuses in Chatham and Wallaceburg, Ontario.***

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