

A vertical illustration of a DNA double helix on the left side of the page. The two strands are colored yellow and black, and they are connected by horizontal black lines representing base pairs.

## **Storylines Health & Safety: Health Emergency or Pandemic Protocol**

In the event of an infectious disease Health Emergency or Pandemic, Storylines has the following protocol in place to ensure that any Storylines ship is the safest place to be for its residents.

Precautionary measures will include the following procedures. Order and variation may apply subject to the nature of the issue and recommendations from the World Health Organisation (WHO) and the Centre for Disease Control (CDC).



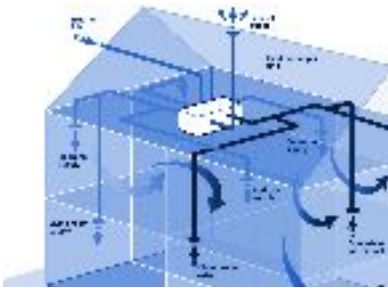
1. Outbreak period
  - a. At the start of any known outbreak, Storylines will adjust the itinerary to avoid countries or regions with confirmed cases
  - b. Personal safety procedures will be activated including additional health screenings
  - c. Restrictions may be enacted on public and guest movements on and off the ship
  - d. Additional medical and food stores provisioned
  - e. Multiple procedures to lower touchpoints between people on board, crew and residents
  - f. Encouragement of personal safety hygiene practices
  - g. The itinerary may be further adjusted as outbreak areas become known
  - h. Increase frequency and duration of Ozone, Hydroxyl and Ultraviolet air and surface cleaning in all areas including resident and crew spaces, common areas, food prep spaces and restrooms
  - i. Isolation and hospitalization of any infected persons
2. Health emergency period (prior to a pandemic)
  - a. The vessel will be on lockdown; no new people to arrive onboard
  - b. The vessel's residents will undergo any WHO recommended isolation periods
  - c. Increased frequency and duration of Hydroxyl and Ultraviolet air and surface cleaning in and around isolation area
  - d. When recommended by CDC or equivalent, high-risk passengers may be transferred to a qualified medical unit for recovery
  - e. The ship will relocate to a predetermined location such as Tahiti or another similar island location
  - f. The ship will stay at this location while the issue is being resolved and our residents will be free to carry on in their normal way
  - g. The vessel may be able to navigate between local isolated islands or Countries
  - h. Residents will resume the ability to come and go subject to the requirements of the location we are based at during this time
3. Post-event
  - a. The captain and management teams will determine when it is safe to return to the regular itinerary. At that point, Storylines will resume its planned schedule.

## Storylines Clean Air, Surface & Water Program

Storylines' vessels aim to be the most hygienic in the industry by utilizing technologically advanced sanitation equipment as a standard health and safety precaution for our residents.

THE COMBINATION OF OZONE, ULTRAVIOLET, HYDROXYL AND PCO HYDROXYL GENERATORS UTILIZE GREEN TECHNOLOGY TO PROVIDE MODERN, SAFE AND EFFECTIVE METHODS TO KILL MOLD, BACTERIA & VIRUSES.

Hydroxyl generators improve indoor air quality by reducing 99.9% of viruses (including coronaviruses), bacteria (such as MRSA, Clostridium Difficile and E. Coli) and other pathogens. Hydroxyls not only clean the air, but soft and hard surfaces as well. This chemical-free technology increases the effectiveness of standard decontamination procedures. Hydroxyls combined with the additional technologies below will be used in areas of the ship with multiple people and visitors, providing maximum protection.



### Public Spaces

- ✓ Ozone and hydroxyl technologies installed into ship heating, ventilating, and air-conditioning (HVAC) units.
- ✓ Whole ship protection for public areas, dining rooms and hallways.
- ✓ High dose night treatment for high-risk areas, such as bathrooms and kitchens, offering 24-hour protection.



### Residences

- ✓ In-room personal hydroxyl sterilization units.
- ✓ Ultraviolet with or without ozone may be activated when the room is not occupied.
- ✓ Rooms can be treated with ultraviolet and ozone prior to housekeeping arrival to ensure a clean work environment and no cross-contamination.



### Surfaces

- ✓ Aqueous Ozone is more effective than bleach, 100% safe for people, kills germs, and is entirely free from chemicals.
- ✓ Used for surface areas such as upholstery, walls, floors, railings and fixtures.
- ✓ Regular contaminant testing to spot potential infection areas to be treated



### Food Prep Areas

- ✓ Aqueous Ozone for kitchens, restaurants, bars and food prep areas.



## Testing and Screening

- ✓ If necessary, Storylines will activate a screening process to ensure health safety and medical treatment for all passengers.
- ✓ If quarantine areas are deemed necessary, these protocols and technologies will limit exposure.



## Personal Water Purification

- ✓ In-room ozone/ultraviolet water purifiers for residents and crew.
- ✓ Creates an Alkaline based system in the body by adding hydrogen and magnesium and removes fluoride, heavy metals, chlorine, bacteria and more.



## Wastewater Treatment

- ✓ Wastewater is treated with ozone/ultraviolet to destroy pathogens and prevent contamination.



## Wearable and AI technologies

- ✓ In-room sensors and wearable health monitoring devices send alerts to the medical staff of anomalies, often before the patient knows there is a problem, allowing efficient care to the individual.
- ✓ Thermal and infrared cameras in public spaces use advanced AI and millions of proven data points to assess if there is a threat or potential health concern, allowing the crew to act swiftly in an emergency.

## Additional Reading:

CDC Guidelines: [Appendix A | Isolation Precautions | Guidelines Library | Infection Control](#)  
[CORONAVIRUS - Hydroxyls kill the Coronavirus and offer a helpful solution in controlling the outbreak](#)

## HYDROXYLNEWS

### CORONAVIRUS – Hydroxyls Kill The Coronavirus And Offer A Helpful Solution In Controlling The Outbreak

🕒 February 3, 2020 👤 Hydroxyl 📄 Case Study, Hydroxyl news 💬 0

HGI Industries explains why and how this can take place in the two short white papers attached discussing the affects on the virus derived from direct relationships in past FDA testing.

“Considering that the FDA threshold for “efficacy” is a 2-3 log kill rate within 8 hours, the MDU/Rx™ treatment unit kill rate reductions of over 99.99% within one to two hours are exceptional. This reflects the fact that hydroxyls and the secondary organic oxidants they generate kill microorganisms by the physical process of attacking the chemicals in their cell walls.”

Global Coronavirus Outbreak 2020

<http://www.hydroxylnews.com/hydroxyl-news/coronavirus-hydroxyls-kill-the-coronavirus-and-offer-a-helpful-solution-in-controlling-the-outbreak/>

**Surface Cleaning** - Aqueous Ozone is chemical-free so doesn't require the same training as hazardous chemicals. EN13967 and EN1276 verified, so you can use it in all foodservice areas. <https://purozo.co.uk/how-it-works/>



Oxygen is converted into ozone then combined with the stabilised water to create Stabilised Aqueous Ozone.



Molecules in the cleaning solution are attracted to bacteria and dirt, destroying them upon contact.



The SAO™ cleaning solution then reverts safely back to water and oxygen.

## Differential removal of human pathogenic viruses from sewage by conventional and ozone treatments.

Wang H<sup>1</sup>, Sikora P<sup>2</sup>, Rutgersson C<sup>3</sup>, Lindh M<sup>1</sup>, Brodin T<sup>4</sup>, Björlenius B<sup>5</sup>, Larsson DGJ<sup>3</sup>, Norder H<sup>6</sup>.

Author information

### Abstract

Sewage contains a mixed ecosystem of diverse sets of microorganisms, including human pathogenic viruses. Little is known about how conventional as well as advanced treatments of sewage, such as ozonation, reduce the environmental spread of viruses. Analyses for viruses were therefore conducted for three weeks in influent, after conventional treatment, after additional ozonation, and after passing an open dam system at a full-scale treatment plant in Knivsta, Sweden. Viruses were concentrated by adsorption to a positively charged filter, from which they were eluted and pelleted by ultracentrifugation, with a recovery of about 10%. Ion Torrent sequencing was used to analyze influent, leading to the identification of at least 327 viral species, most of which belonged to 25 families with some having unclear classification. Real-time PCR was used to test for 21 human-related viruses in inlet, conventionally treated, and ozone-treated sewage and outlet waters. The viruses identified in influent and further analyzed were adenovirus, norovirus, sapovirus, parechovirus, hepatitis E virus, astrovirus, picobirnavirus, parvovirus, and gokushovirus. Conventional treatment reduced viral concentrations by one to four log<sub>10</sub>, with the exception of adenovirus and parvovirus, for which the removal was less efficient. Ozone treatment led to a further reduction by one to two log<sub>10</sub>, but less for adenovirus. This study showed that the amount of all viruses was reduced by conventional sewage treatment. Further ozonation reduced

### Hydroxyl Equipment

The [Odorox<sup>®</sup> MDU/RxTM](#) device (hydroxyl generation), obtained [FDA approval](#) for use in occupied medical facilities and can be used in many applications including ships. Hydroxyls are safe, naturally occurring molecules created outdoors when the ultraviolet rays of the sun react with oxygen and water vapor from the air. "Hydroxyls are the single most important agent that scrubs and cleanses our planet's atmosphere." They do not occur naturally indoors so this technology produces hydroxyls in the same concentration as found outdoors. They sanitize by destroying microorganisms.

### Developed for NASA astronauts

Photocatalytic Oxidation (PCO) hydroxyl generators were originally developed by [NASA](#) as part of its Advanced Technology program for astroculture to remove ethylene from air with a unit that does not require any consumables. Further research discovered Photocatalysis had "potential for use in a number of NASA applications. The most obvious application for the removal of unwanted gas(es) from moderate and long-term confined areas, as in Space Shuttle cabins and in the International Space Station." It was determined that "...using photocatalysis to eliminate pollutants from confined spaces could be derived for NASA...as well as for the general use of [photocatalysis in non-NASA applications](#)".

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