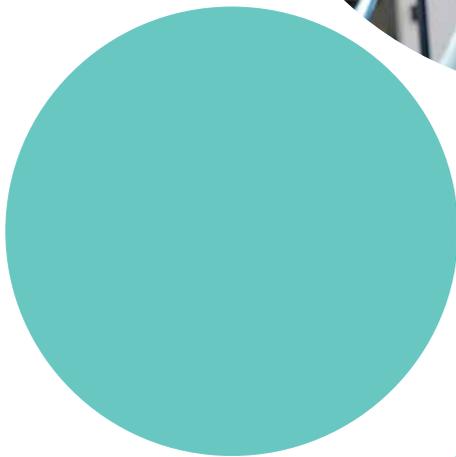
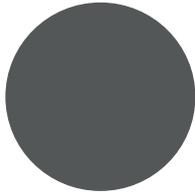
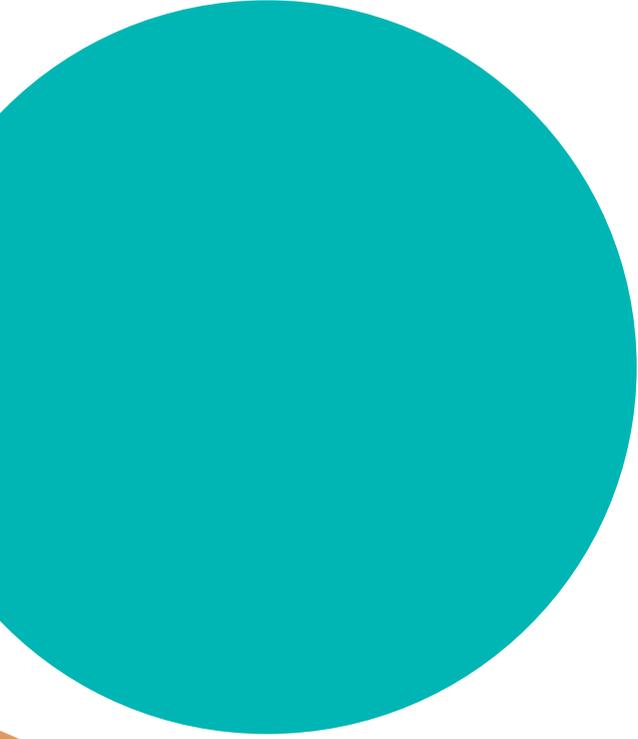


airandé

SUPERIOR DISINFECTION SOLUTIONS

THE FUTURE
OF DISINFECTION
IN HEALTHCARE



Contamination: Risks to Clinicians, Staff, Patients

Contamination in hospitals, clinics, and other healthcare settings poses significant dangers to clinicians and their staff, and their patients.

There are many sources of infection in the healthcare environment. These result in increases in mortality and morbidity. They place an additional and unnecessary strain on medical systems through increased bed-stays and greater economic costs:

- The estimated economic cost of health-care associated infections ranges from 3.5 billion euros in the United States to 1.3 billion euros in England, and 2.5-5 billion in Italy.¹
- The 2014 HAI Prevalence Survey reported that in 2011 there were an estimated 722,000 HAIs in US acute care hospitals. Additionally, about 75,000 patients with HAIs died during their hospitalization.²
- Reducing the incidence of nosocomial infections has become a primary objective of all healthcare facilities
- Certain bacteria that cause nosocomial diseases are resistant to treatment by antibiotics (e.g., VRE, MRSA, and Pseudomonas)

20 to 30% of annual contamination would be preventable.

Prevention and disinfection are the main elements in the fight against nosocomial diseases and control the transmissions of multi-resistant bacteria.

The risk of transmission of infectious diseases among healthcare workers is very real. This contamination of the personnel can be done either by the patient, by another caregiver or by a contaminated environment.

The transmission of infectious agents in the healthcare system result in a range of infections:

- Surgical site and bloodstream infections together with lower respiratory tract and urinary tract infections are common healthcare associated infections.
- The causative organisms originate either from the patient themselves (endogenous infection), but also can be transported via personnel, equipment or medical devices (cross infection). Some infections are also related to the hospital environment (water, air, alteration, ...).
- By contact with contaminated instruments, equipment, or surfaces.

1. Agazzino, E., Di Palma, MA, Gimigliano, A. and Piro, A. (2008). Economic impact of healthcare-associated infections. *Ig Sanita Pubbl.*64(5):655-670.

2. Magill, SS., Edwards, JR., Beldavs, W., Beldavs, ZG., and ors. (2014). Multistate Point-Prevalence Survey of Health-Care Associated Infections. *The New England Journal of Medicine.* 270: 1198-1208



What do the experts say?

CDC (2015): On the basis of a 2011 study, the CDC has increased its estimate of the annual burden of Clostridium Difficile infection in the US, putting it at 453,000 cases per year with 29,300 associated death.¹

Dr Michael Bell stressed the need to respond to *C Difficile* by preventing needless use of antibiotics and ensuring rigorous infection control in healthcare settings.

R Douglas Scott said in the publication “The Direct Medical Cost of Healthcare – associated Infections in US Hospital and Benefit of Prevention” that the overall annual direct medical cost of HAI to US hospital ranges from 28,4 to 33,8 billion US dollars.²

Non-manual techniques for terminal disinfection of hospital rooms have gained increasing interest in recent years as means to reduce transmission of multidrug-resistant organisms (MDROs). A prospective crossover study by Blazejewski and colleagues in five ICUs of a French academic hospital with a high prevalence of MDRO carriers showed that two different hydrogen peroxide (H₂O₂)-based non-touch disinfection techniques reduced environmental contamination with MDROs after routine cleaning.

This study provides further evidence of the ‘in use’ bioburden reduction offered by these techniques. Before H₂O₂-based non-touch disinfection can be recommended for routine clinical use outside specific outbreak situations, further studies need to show whether the environmental contamination reduction provided by these techniques is clinically relevant and results in reduced cross-infections with MDROs.³

Hydrogen peroxide aerial decontamination systems have been shown to be effective in reducing environmental contamination and consequent acquisition of infection.

The prevalence of *C. difficile* may be reduced when hydrogen peroxide is used.

During an outbreak of *C. difficile* infection, hydrogen peroxide decontamination was associated with a reduction of environmental isolation of the organism from 11/43 (25%) to 0/37 (0%) cultures. A retrospective analysis of 334 rooms vacated by *C. difficile* patients and decontaminated using hydrogen peroxide or hypochlorite demonstrated that, compared with standard cleaning, hydrogen peroxide decontamination reduced the rate of acquired *C. difficile* (rate ratio 0.65, 95% confidence interval 0.50 0.79).⁴

1. Centre for Infectious Disease Research and Policy. (2015). CDC puts *C difficile* burden at 453,000 cases, 29,000 deaths. *CIDRAP News & Perspective*. www.cidrap.umn.edu/news-perspective/2015/02/cdc-puts-c-difficile-burden-453000-cases-29CDC

2. Scott, RD. (2009). *The Direct Medical Costs of Healthcare-Associated Infections in US Hospitals and the Benefits of Prevention* Centers for Disease Control and Prevention: Atlanta, Georgia.

3. Huttner, BD. And Harbath, S. (2015). Hydrogen peroxide room disinfection – ready for prime time?. *Critical Care*: 19:216

4. Ali, S., Muzslay, M., Bruce, M., Jeanes, A., Moore, G., and Wilson, AP. (2016). Efficacy of two hydrogen peroxide vapour aerial decontamination systems for enhanced disinfection of methicillin-resistant *Staphylococcus aureus*, *Klebsiella pneumoniae* and *Clostridium difficile* in single isolation rooms.

How to Manage Contamination in the Healthcare Setting

Airandé – the complete H₂O₂ Disinfection System that allows Clinicians and Healthcare Administrators to:



Eliminate contamination from the healthcare environment and reduce the risk of contamination through bacteria, viruses, spores, yeasts, fungi, and moulds.

Reduce the risks of contamination to clinicians, staff, and patients.

Use an approach to disinfection that is:

- broad spectrum in its action: bactericidal, virucidal, sporicidal, and fungicidal,
- environmentally friendly,
- compatible with most materials found in healthcare settings,
- efficient and cost effective, and that saves time and labour in their disinfection routine.

Why H₂O₂?

- ✓ Efficient (researched, developed, innovated, and validated by scientific tests and data).
- ✓ A full spectrum of disinfection activity.
- ✓ Eco-friendly, biodegradable: H₂O₂ decomposes into water and oxygen after use.
- ✓ Odourless.
- ✓ Not dangerous to users when used according to instructions.
- ✓ No residue effect.



H₂O₂ is More Effective Than Existing Disinfection Modalities

Summary of Disinfection Modalities:

	BACTERIA	YEASTS	FUNGUS	ENVELOPED VIRUSES	VIRUS	MYCOBACTERIA	BACTERIAL SPORES
ALDEHYDES*	●	●	●	●	●	●	●
ALCOHOLS	●	●		●			
PHENOLIC DERIVATIVES	●	●	●	●			
CHLORINE DERIVATIVES	●	●	●	●	●	●	
QUATERNARY AMMONIUM CATIONS	●	●		●			
BIGUANIDES	●						
PERACETIC ACID*	●	●	●	●	●	●	●
HYDROGEN PEROXIDE	●	●	●	●	●	●	●

*Aldehydes, Peracetic Acid, and H₂O₂ are the only full spectrum disinfection substances. But, not all full spectrum disinfection substances are safe:

- **Aldehydes** are highly toxic and irritating
- **Peracetic Acid** is corrosive, explosive at high concentration, malodorous, and must be handled with great caution.

Full Spectrum and Safe:

	BACTERIA	YEASTS	FUNGUS	ENVELOPED VIRUSES	VIRUS	MYCOBACTERIA	BACTERIAL SPORES
HYDROGEN PEROXIDE	●	●	●	●	●	●	●

This means H₂O₂ is the best alternative solution for disinfection

The Airandé Disinfection System

3 Objectives:

1

High-volume disinfection through airborne circulation of dry-fog of 5-15 microns in particle size (using Airandé DF-1 and 7.9% H₂O₂ solution).

.....

2

Manual disinfection between patients or between high-volume disinfection cycles (using Airandé 3.25% H₂O₂ solution).

.....

3

Disinfection and removal of contamination of the air by photo-catalysis (using the Airandé AP-13 air purifier).

.....

Innovation, Engineering, Science, Manufacturing and Distribution

The Airandé Disinfection System is the result of innovation in clinical and scientific settings. This has drawn on the expertise of the very best thinkers and practitioners in the disinfection world.

Airandé has its Principal Scientific Adviser in Belgium. Its Global V-P, Research and Development is also located in Belgium.

The Design and Engineering of the System has been done across three continents: Australia, China, and Europe.

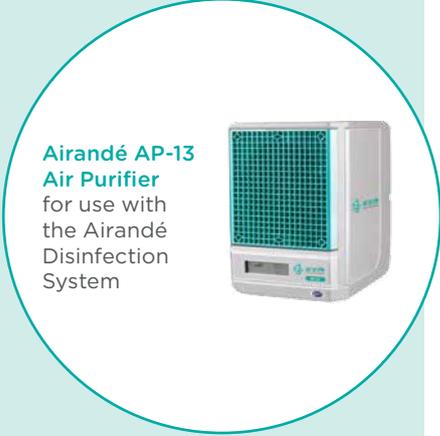
Manufacturing of different elements of the system is done in Germany, Australia, China, and the USA. All of our manufacturers and suppliers are accredited to ISO 9001:2015. Some are also accredited to ISO 13485:2016.

Airandé maintains a QMS system which is currently being reviewed and audited to allow the company to be certified under ISO 13485.

Product development has also benefited from collaboration with universities worldwide. Airandé's focus on innovation, research, and development in the disinfection field is extremely important in achieving its goal of providing leadership in the science and management of disinfection. This means that Airandé will continue to work in collaboration with the leading microbiologists and disinfection scientists globally.



Airandé DF-1



Airandé AP-13
Air Purifier
for use with
the Airandé
Disinfection
System



Airandé H2O2
Impregnated Wipes
for use on Surface
Related Bio Film



Airandé H2O2
Solution 3
for use as a
Surface Spray
between cycles



Airandé H2O2
Solution 8
for use in the
Airandé DF-1

The Airandé Disinfection System

The Airandé Disinfection System

The Airandé DF-1



Ensures optimal surface disinfection after manual cleaning

Extended spectrum of activity to remove contamination from a wide range of sources including bacteria, viruses, spores, and moulds

Disinfects spaces between 5m³ and 165m³

Limited down-time of treatment rooms, operating theatre, day surgeries, wards and other healthcare settings

Rapid diffusion: 11 min to 45 min

No volatile organic compounds

No residue

Ergonomic

Economical: 7ml/m³

Easy to use

- Reaches all surface areas
- Dry – not wet
- Captures and kills all sources of surface contamination – including bacteria, viruses, spores, and moulds

Traceability of use, date, operator, room ID, reason for disinfection: all downloadable through USB

Portable printer

The DF-1 comes with a easy-to-manage trolley. The DF-1 can be simply removed from the trolley and carried in a specially designed bag. This enables the operator to take the DF-1 into small spaces.

Airandé Solution 8

7.9% SOLUTION OF H₂O₂



Used in conjunction with the DF-1

Ready-to-use solution: no mixing or onsite dilution required

Single-use ensuring purity of product

No surface residue

No residual humidity

Biodegradable

No corrosion on most materials

Airandé Solution 3

3.25% SOLUTION OF H₂O₂



Used for manual cleaning of surfaces in between scheduled use of the DF-1

Ready-to-use solution: no mixing or onsite dilution required

No surface residue

Biodegradable

No corrosion on most materials

No trace of NH₄⁺, phenol, chlorine, biguamide, aldehyde, alcohol and VOC

The Airandé Disinfection System

Airandé AP-13 Air Purifier



The AP-13 utilizes needlepoint ionization, pulsating negative/positive ion field generator, corona discharge air freshener, and technology consisting of a special UV light and photo-catalyst target thereby creating an advanced oxidation plasma containing several friendly oxidisers.

The AP-13 is ideally suited for healthcare. Its plug-and-play, no-required-installation is an advantage, along with remote controls to prevent capricious settings changes.

The AP-13 can be used and kept on during patient treatment sessions. Many healthcare administrators will choose to have an AP-13 in each treatment room. Additional AP-13s can be installed in patient waiting areas, thus ensuring that air disinfection is constant throughout the healthcare settings.

Airandé H2O2 Impregnated Wipes



H₂O₂ impregnated wipes that enhance the manual cleaning of contaminated surfaces.

The H₂O₂ penetrates deep into the surface materials found in healthcare settings and ensures that contamination is eliminated even from areas that are not visible to the naked eye.

What do you get when you buy an Airandé Disinfection System?

- 1 x Airandé DF-1
- 1 x Trolley DF-1-T (Fold-out work desk, Electrical cord, Portable printer)
- 1 x AP-13 Air Purifier
- 1 x Carry bag
- 6 x Bottles of Airandé Solution 8
- 12 x Bottles of Airandé Solution 3
- 6 x packs of Airandé BW-1 Wipes

2-year warranty on Airandé DF1, DF-1-T, and AP-13*

What do you get when you become a distributor of the Airandé Disinfection System?

A highly innovative product using leading edge technology

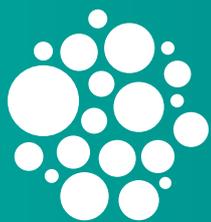
A competitively priced product

Backing of a company with expert knowledge about disinfection and bacterial control

Training in disinfection principles and protocols. And training in the use of Airandé disinfection products

*The catalytic reactor in the AP-13 has a warranty of 60 days. Otherwise the AP-13 has a warranty of 2 years.





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SUPERIOR DISINFECTION SYSTEMS

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