

# “Clean Air makes the difference”



## Introduction

The increased amount of nosocomial infections, due to failed (air) hygiene ((Lidwell et Al), the increased threat of pandemics due to the intensified veterinary industry and globalization (Osterhaus et Al) and the increased microbiological resistant against antibiotics – forced medical staff and employees to think more on prevention instead of curation.

The importance of air - or in other words the possibility to transmit pathogenic materials by air, became more and more important on the agenda of the WHO.

## Why is clean air so important ?

The reduction of fungi, bacteria and viruses does have a significant impact on the air quality and would be beneficial for several medical departments.

Health care facilities show naturally a much higher concentration of (dangerous) micro-organism then normal facilities like offices or even at home. A longer stay in high contaminated air means - in the sum - a doubles the risk of catching an airborne contamination.

Improved air quality could benefit IC patients during recovery, prevent vulnerable patients (bone marrow, chemo, etc.) catching a normally harmful cold virus. TBC or MRSA Patients could be preventive isolated or normally minor treatments like a diabetic feet could be treated in a normal

## Company

Virobuster have been established in 2002 and initially developed successfully the medical market before entering the food production industry. The Steritubes are produced at the German JK-Group. The JK-Group has its production facility in Germany and is DIN, ISO and TÜV certified.



## UVPE (Ultra Violet Pathogen Elimination)

The air is guided through the UVPE field. The DNA of the micro-organism is blocked (thymine blocking), preventing future cell division and making the micro-organism harmless (medical: not infectious anymore, Industrial: no product decay anymore).



The doses needed for sufficient deactivation depends on the type of organism, the intensity - and the residence time in the UV field.



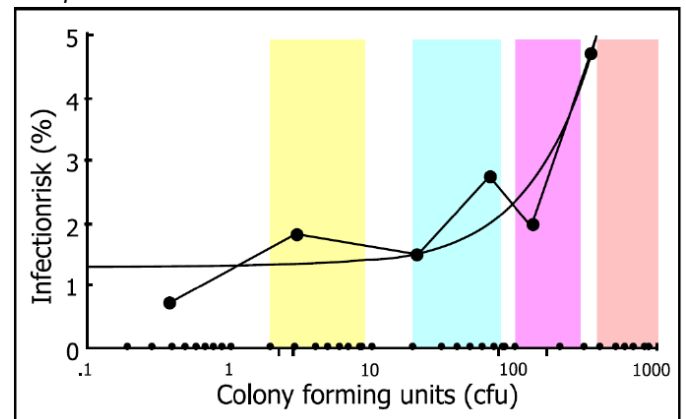
## “Total Hygiene Concept”

Next to hand washing, clean working, clean water, clean equipment and clean materials/products, also clean air gained significance and is the missing link to a “Total Hygiene Concept”.



## “Clean Air makes the difference”

A reduction from 1.000 CFU to 100 CFU (10 CFU), results in a decrease of infection risk of 60% (74%) – Lidwell et Al, Lindqvist et Al.



The reduction of micro-organism in the air means a significant decrease of infection risk among patients and increased safety for medical staff

## Clean air in health care facilities



A Steritube can be a good alternative to HEPA filtered air if the technical equipment for any reason whatsoever not allow conventional HEPA in an operation theatre. Or when there is no HVAC installation at all.



the individual capabilities of a Steritube application, are ideally suited for an intensive care by integration in an HVAC or just mobile for more patient security needs.



The fact that a VIROBUSTER® solution can be used “on demand” for both maximum patients - as well as environmental protection (individually or together), means big energy and maintenance savings compared to conventional solutions.



For minor procedures with an increased risk it is good to know that the hospital has a mobile Steribase available. The placement of a Steribase 300 Plus one hour before and during treatment provides maximum safety.



in some cases it may also be very helpful for patients rooms to provide improved air quality, thinking of new born, burn wound, (bone marrow) transplant and chemotherapy patients.



Waiting rooms are usually a “meeting place” for pathogenic microorganisms with increased infection risk

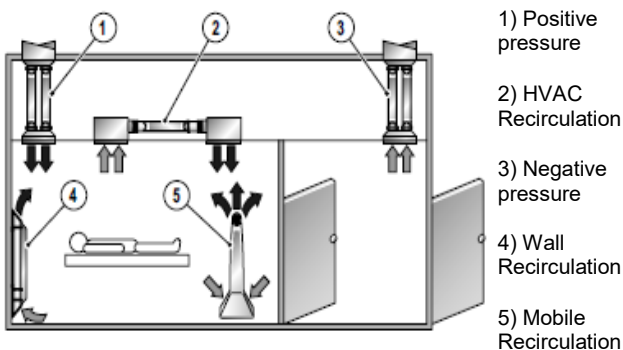
### “Born Global Firms” Prof. P. Englis

“In less than eight years, Virobuster has efficiently and effectively taken over a global industry that needed help. With a solid line of products all designed to attack air sterilization, Virobuster has become a leader in their industry”.



### How is it used in practice ?

Next to standard HVAC system integration, the Steritubes excel in their flexibility for local and on-demand-solutions. The Steritubes can be driven in a bi-directional airstream concept (inlet and outlet in same device) if needed.



## Examples in practice:

**A German university clinic** requested a new heart-catheter operation room, but space failing conditions prevented a classic HEPA based implementation. The Steritubes did fit exactly in the existing ducts and proofed after independent measurements to provide the same or even better air quality.



**A Dutch clinic** was forced to implement some isolation rooms for incoming patients who had staid in foreign hospitals (seek & destroy policy towards MRSA). With the Steritubes, the just changed on every department 2 patients rooms into isolation rooms on-demand.



**The burn wound centre in Foshan (CN)** executed their department with several Steritube installation, reducing the infection risk among patients.



### Author: Fahmi Yigit

Fahmi Yigit started in 2002 in close cooperation with international institutes the development of the UVPE technology. Within Virobuster International GmbH he is responsible for the world wide new business developments and is member in several legislation boards and a worldwide respected lecturer on air hygiene issues.

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