

# CLINICAL TRIALS

## Uzsoki Hospital, Budapest, Hungary

Trial carried out in an 870 bed leading teaching hospital in Budapest with accredited air sampling and analysis done by Wessling Laboratories Hungary.

### Results:

- **Significant reduction in all classes of airborne bacteria and fungi/moulds count was measured over the period of the test and subsequently maintained.**
- **82% drop in CFU rates (T0 / T4 average)**
- **Average reduction bacteria count: 52%**
- **Average reduction fungi count: 93%**
- **The air quality now meets the Swiss Class III standard (500 CFU/m<sup>3</sup> for general wards)**

## Rigshospitalet, Copenhagen, Denmark

A nine month study carried out at Rigshospitalet, a highly specialized hospital with 1100 beds. Testing by the Laboratory of Infection Hygiene and the Department of Clinical Microbiology.

### Results:

- **Significant reduction in bacterial loads on high surfaces and windows sills.**
- **In control section with no units, the number of infections of all kinds increased by 35% from 2013 to 2014.**
  - **The number of overall infections fell 23% in the section with Novaerus units.**
  - **58% point swing.**

## NHS Royal Free Hospital Clinical Trial, UK

Novaerus wins prestigious Smart Solutions for HAI's award from the NHS in 2010. This trial was conducted in the Royal Free Hospital in London, by the UK Government Department of Health.

- Royal Free Hospital in London has 900 beds and treats 700,000 patients per year
- 16 week clinical trial - 8,500 air and surface samples - 21 locations around the hospital

### Key Results:

- **97% reduction in MRSA**
- **75% reduction in surface bacteria counts**

## Fresenius Dialysis Trial, Portugal

Novaerus units installed in Fresenius 30 station dialysis centre over 6 weeks period.

### Results:

- **87% reduction in airborne bacteria**
- **93% reduction in VOCs**
- **Up to 67% reduction in moulds**

These changes were achieved within 2 days after the start of the trial and subsequently maintained.

## Manchester Manor, Florida, USA

The study analysed the impact of Novaerus technology on the rates of Clostridium Difficile and respiratory infections in the 120 bed skilled nursing facility over an 11 month period.

### Results:

- **C. Diff Infections Down 50%**
- **Respiratory Infections Down 42.86%**



# NOVAERUS LABORATORY RESULTS - CLINICAL TRIALS

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## ABOUT NOVAERUS

Novaerus is the first plasma system for airborne infection control. It uses a low energy patented plasma that is stable, reproducible, containable, and highly destructive to the microorganisms entering its field.

The plasma requires no maintenance and works 24 hours a day to eradicate airborne viruses, bacteria, mould, allergens and odours, essentially cleaning the air and creating a healthier environment.

The patented plasma technology is effective against even the most harmful bacteria and pathogens including MRSA, C.Diff, Norovirus and Influenza. By reducing the presence of these contaminants in the air, a healthcare facility can stand to significantly lower the risk of infectious outbreaks.

## In-vitro results and field studies

Along with the continued testing within our own laboratories the Novaerus plasma technology has been independently trialled and proven to effectively destroy airborne bacteria, viruses, pathogens odours and VOC's at an extremely high kill rate in a matter of milliseconds. The technology has been tested by a number of third party laboratories, including the NASA Ames Research laboratory in the US and Microsearch Laboratories in the UK.

The effects of the technology have also been monitored in many healthcare facilities across Europe and the US, showing major reductions in infectious outbreaks and bacteria surface counts.

## LABORATORY TESTED & PROVEN

Independent Study done by Ames Research Laboratory June 2014

Ames Research Center, one of ten NASA field centres conducting world-class research and development in aeronautics, exploration technology and science, are carrying out ongoing testing of Novaerus as most effective available air sterilisation technology.

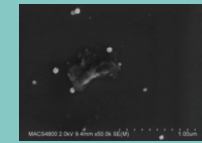
Novaerus plasma technology was found to be uniquely destructive to ALL Genetic Material. These results were further verified using the Synchrotron particle accelerator at Stanford University, which confirmed the total destruction of the microorganisms, and their constituent DNA material, after only a single pass through the Plasma Field.

### Novaerus Plasma Treatment

Pathogen destruction in 2 milliseconds. Species are broken down into small, safe molecules.



Destruction of the cell wall of the bacteria. Fluorescence has entered the inside of the cell.



**END RESULT:** Total destruction of organism and genetic material.

*"The Novaerus Plasma technology is rapid and the inactivation occurs immediately. Concrete evidence of the effect of plasma on airborne bacteria; strong chemical and structural changes are observed."*

Dr Ram Prasad Gandhiraman, Research Scientist, NASA



### Microsearch Laboratories: UK

#### BACTERIA TESTING

- Tested array of gram positive bacteria, gram negative bacteria, gram positive spores, yeasts and mould spores
- Results: >Log 5 kill rate for all classes

#### VIRAL TESTING

- Single / Double Strand DNA & RNA
- Results: >Log 5 single pass 'kill rate'  
Total annihilation over 1 hour



### University of Huddersfield, UK

- The Novaerus system removed **95% of all contamination in the air in only 30 minutes which represents a rate of removal of >3700 CFU/m<sup>3</sup>/sec**
- The levels of contamination used to challenge the system in this case are much higher than would be experienced in healthcare setting
- *"Novaerus is likely to make a significant impact on airborne contamination."*