

Safe and economical elimination of HOSPITAL BACTERIA
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Introduction

Everyone knows hospital acquired infections, or Hai's, affect at least 10% of hospital patients, particularly after an operation when they are less able to deal with this added complication.

The eradication of Methicillin resistant strain, MRSA of Staphylococcus aureus or Escherichia coli is essential to all hospitals throughout the world and up to now has not been achieved even allowing for costly cleaning and disinfectant programmes. As 'none care personnel' are involved in this cleaning operation there is obviously less money available for the real 'care' required in hospitals.

The extra cost to hospitals of infected patients for the longer periods is becoming a big strain on budgets.

Actions

To drastically reduce the presence of MRSA related bacteria.

To cut down the number of patients with hospital infections picked up.

To produce a speedier recovery for patients and quicker discharge leaving beds free for the next patients.

To cut down cleaning cost

To eliminate repeated cost of redecoration

Results

The standard of hospital care will significantly improve and at a lower cost to all

Implementation

Up to now all cleaning methods have been unsuccessful to eradicate MRSA.

The only option remaining is to destroy these difficult bacteria.

Surfaces must be protected so no bacterial colonisation can occur.

The protection has to be free of a feeding source.

The protection must be easily and cost effective cleanable when blood and other visible spillage arrives on the surface.

For the protection to be cost effective it must resist abrasion i.e. walls and floors with the passage of hospital beds and equipment.

This protection should be durable and to last for many years.

The process must be completely safe

i.e.

1) No smell

2) No harmful solvents emitted

3) Not be dangerous to the patients

4) Not omit hazardous fumes in the event of a fire

5) Have superior fire resistance

6) Be easily cleanable

7) Eliminate completely or greatly reduce by a factor >>> 97% of the MRSA related living bacteria from the surface without change of aspect

8) Remain effective for many years

The Biocidal solution

At the beginning of 2009 a programme was initiated to add an already proven biocide to easy-on™ coating and test the bacterial efficacy of the modified coating.

In Vienna first test results were astonishing with a 95, 6-99, 76% reduction in S.Aureus and also E.colli concentration after 24 hours of contact (see addendum report 5)

Additional tests conducted in Germany produced even better results with a 99, 9% reduction in E.colli concentration (see addendum report 6)

As corroborative evidence the results were repeated at a leading UK universities Biomedical Research Centre using a specially prepared MRSA strain and results were almost identical with 97% reduction in MRSA after just 1 hour contact (see addendum report 7)

The biocide incorporated into easy-on has been tested by the Biomedical Research Institute of the University of Vienna as an additive to skin cream and it completely eradicated skin disease after MRSA had been applied to the surface.

The biocide has been in commercial use for more than 5 years in fogs as a disinfectant for hospitals/kitchens/ambulances.

Testing procedures

BIOMEDICAL RESEARCH CENTRE at Hallam University, Sheffield, UK

Panels tested had 5% of biocidal additive to easy-on

Prior to testing each prepared panel was cleaned with 90% ethanol.

To each panel a specific concentration of Staphylococcus aureus (Methicillin resistant strain, MRSA (10 power 7 cells/ml) was added and left on the surface for 1 hour before removal and cell counts made (see figure 1)

With an addition of 2,5% biocide 50% of the bacteria were killed and with 5% and 10% addition 97% of the bacteria were destroyed after only 1 hour contact with the easy-on + panels

(See test report Biomedical Research Centre)

Forschungszentrum für Medizintechnik und Biotechnologie

With E.colli similar tests were carried out see table 2 and the reduction in the bacterial count was even more remarkable going from 1,2x10 power 6 cells to 2,7x10 power 1 cell, almost complete eradication of the bacteria >>> 99, 9% reduction

(See test report Forschungszentrum für Medizintechnik und Biotechnologie)

AKA Technology Vienna, Austria

Following Japanese Industrial Standard (JIS Z2801:2000

Tests were again performed this time using Escherichia coli reduction with 5% biocide was 95, 62

(See report Aka -Technology)

Staphylococcus aureus reduction was 99, 76%

Tests were repeated on 7 month old panels and the reduction in the cell count of the respective bacteria was identical to first results showing there was no reduction in the bacteriological efficacy.

Conclusion

A remarkable result for simply one coat at 25 microns which can be applied to any clean surface. The additive at 5% was proven most effective and incorporated into easy-on+

The almost complete eradication of MRSA and related bacteria within 1 hour from easy-on + surfaces is a truly remarkable result .