Cleaning & Sanitising – Medical range

Working in harmony with nature to protect

Introduction

- Hospitals, nursing homes and similar establishments are now acknowledged to have a major pathogenic problem – **Methicillin Resistant Staphylococcus aureus**.
- This represents a significant and **life threatening** cause of hospital acquired infection, and the hospitals act as a reservoir for this pathogen.
- Staphylococcus aureus is a pathogen found in the warm and moist areas of the body. In healthy people it causes little harm, but can cause severe and **dangerous infections** in patients who have had surgery, or who are suffering from boils, septicaemia or pneumonia.
- Staphylococcus aureus is a **thick walled bacterium**, with the ability to develop **resistance** to antibiotics.
- The most resistant strain of this bacteria encountered is resistant to the powerful antibiotic, methycillin and is therefore known as *Methicillin Resistant Staphylococcus aureus,* generally abbreviated to "**MRSA**".
- New antibiotics were developed to overcome this trend, but *S.aureus* again developed **resistance** to these new antibiotics, with potentially disastrous consequences for patients from wound infection.

Main applications

- **Citrox hospital grade** range of products pro-actively eliminate, control and reduce the incidences of virulent and microbial diseases which have become immune to toxic based alternatives, including **Methycillin** Resistant Staphylococcus Aureus, "MRSA".
- They can be used for:
  - The cleaning of **hospitals, clinics, nursing homes** and all similar establishments to remove a wide range of pathogens including MRSA.
  - The reduction of **cross infections** by use in staff personnel and visitor's personal hygiene.
  - The cleaning of all types of **medical equipment** including surgical instruments.

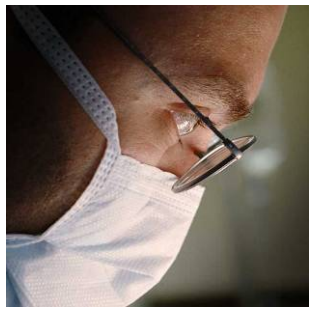
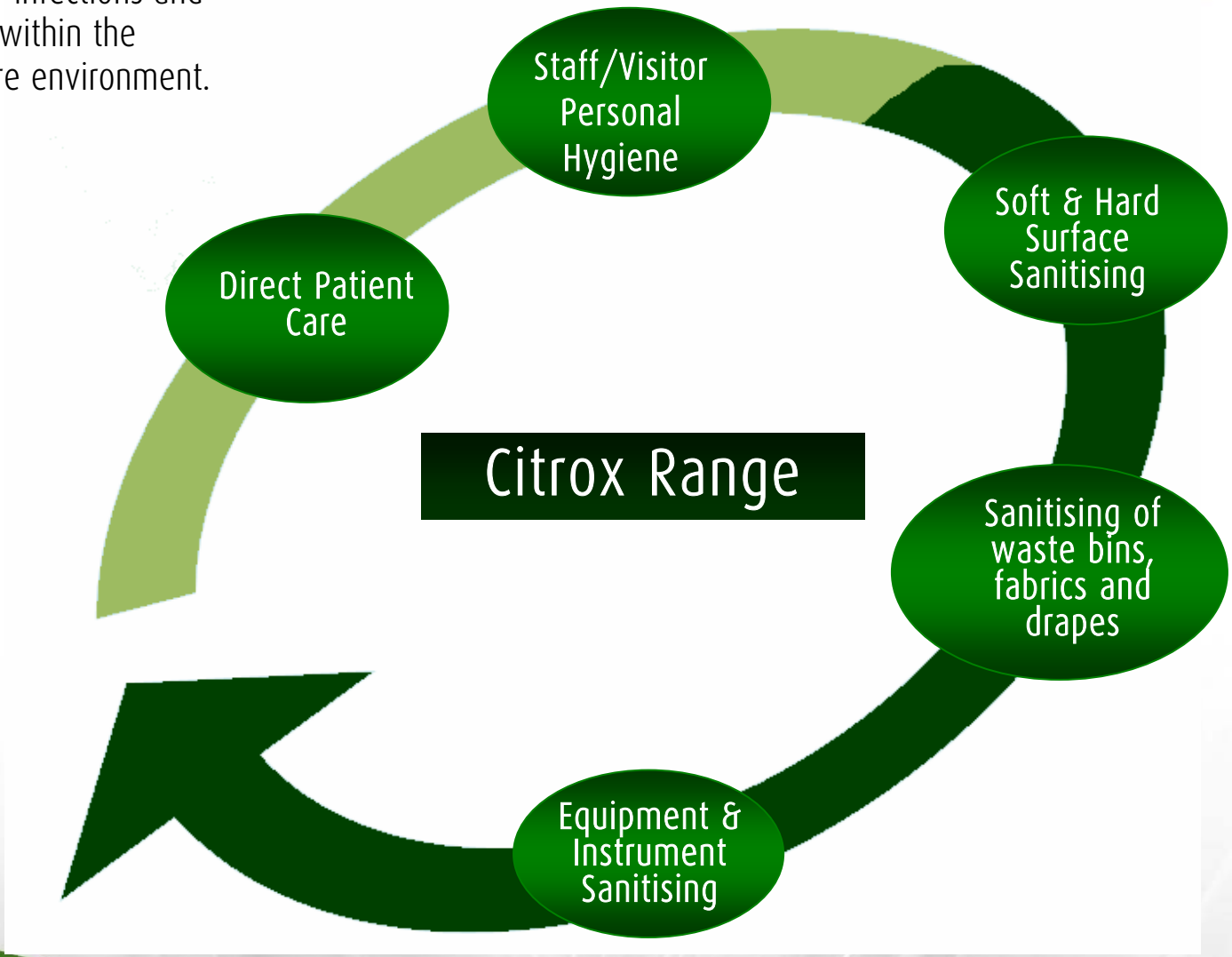


Figure 1: A complete holistic approach to the control of infections and diseases within the HealthCare environment.



Benefits

- Effective against MRSA
- Broad spectrum biocide against bacteria, (gram positive and gram negative) viruses, moulds, yeast and fungi.
- Breaks down biofilm
- Effective in the presence of organic matter
- Strong residual effect
- Non-tainting
- Non-toxic, Non-carcinogenic, Non-mutagenic
- Non-corrosive
- Hypoallergenic
- Citrox ingredients are recognized as non-toxic, hypoallergenic, non-mutagenic, non-carcinogenic and non hazardous to humans.

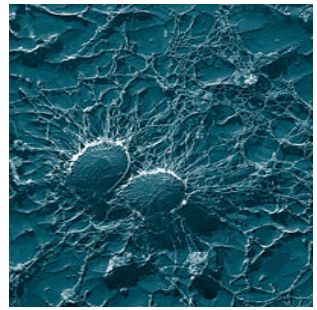
Pathogens tested to date

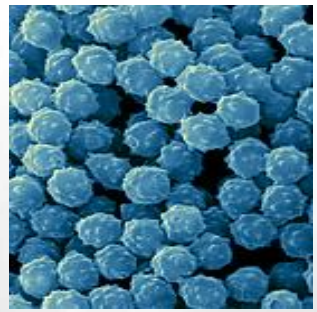
Bacteria

- Campylobacter jejuni
- Dipiodia natalensis
- Escherichia coli
- Geotrichum candidium
- Klebsiella pneumoniae
- Lactobacillus pentoaceticus
- Legionella pneumophila (NCTC 11192)
- Listeria monocytogenes
- MRSA (clinical strain)
- Mycobacterium fortutium (NCTC 8573)
- Proteus vulgaris
- Pseudomonas aeruginosa (ATCC 15442)
- Salmonella cholerasuis
- Salmonella typhimurium (DT004)
- Staphylococcus aureus (NCTC 6571)
- Staphylococcus pyogenes
- Staphylococcus sp.
- Streptococcus faecalis

Yeast and Fungi

- Aspergillus flavus
- Aspergillus niger
- Aspergillus terreus
- Botrytis cinerea
- Candida albicans
- Candida glabrata
- Chaetonium globosum
- Cladosporium
- Collectotricum sp.
- Fusarium sp.
- Geotrichum candidium
- Mucor sp
- Penicillium sp.
- Penicillium digitatum
- Penicillium funiculosum
- Penicillium italicum
- Penicillium roqueforti
- Phomopsis ortl
- Pullularia pullulans
- Pythium sp.
- Trichophyton interdigitale
- Trichophyton mentagrophytes





All of the pathogens/viruses are tested at independent laboratories.
Certificates & reports available on request.

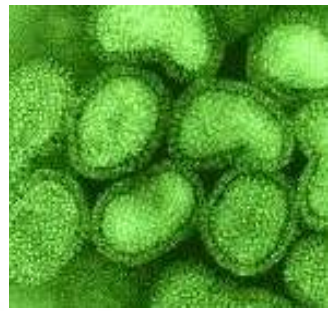
Pathogens tested to date

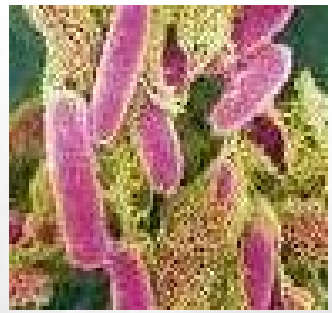
Viruses

- Human Rhinovirus - Retroscreen Virology
- Influenza A - Retroscreen Virology
- Human Immunodeficiency Virus (HIV) - Retroscreen Virology
- Urbani SARS - Retroscreen Virology
- African swine fever
- Avian influenza
- Foot & mouth disease
- Gumboro virus
- Herpes virus type 1 & type 2
- Herpes zoster
- Hepatitis A & B
- Newcastle disease
- Severe Acute Respiratory Syndrome (SARS)

Protozoa

- Histomonas meleagradis
- Giardia lamblia
- Entamoeaba histolytica
- Blastocystis hominis





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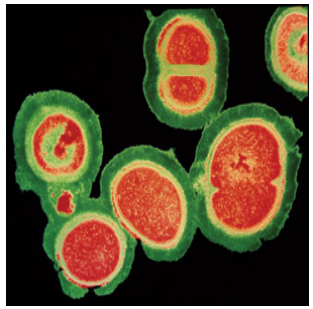
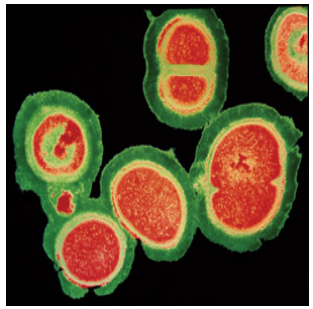
In the control of M.R.S.A. and other opportunistic pathogens

- Health Care organisations and **hospitals** especially now have a major pathogenic problem: **Methicillin resistant Staphylococcus Aureus**, generally shortened to "**MRSA**". S. Aureus is a pathogen found in warm moist areas of the body without immediate harm to them.
- It can cause **infections** to other hospital patients i.e. hospitals can act as a reservoir for this pathogen.
- S. Aureus can cause **abscesses, boils, septicemia and pneumonia**.
- S. Aureus is a **bacterium with thick cell walls** which is able to develop **resistance to antibiotics** and this has resulted in serious outbreaks in hospitals.
- New antibiotics were evolved to overcome this trend, but S. Aureus has now developed further and can **resist the new antibiotics**, and appears to be able to repeat this process of adaptation, with the possibility of **disastrous consequences** for patients as a result of wound infection.



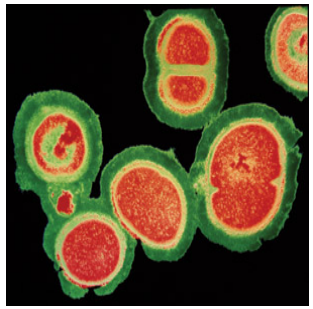
MRSA issues

- The **financial cost** of treating **MRSA** is a matter of great concern to world Health Services.
- MRSA is transmitted by **direct contact** with hands, skin, dust and equipment.
- It has proved particularly dangerous in **wound infections** following surgery, and in some cases is known to have been acquired from operating theatre staff.
- **Areas** especially **at risk** from MRSA are intensive care unite, transplant units, neo-natal units and orthopaedic wards.
- The general approach is that the best answer to MRSA is an **active control programme,** and that inaction is unacceptable – MRSA will not just "go away".



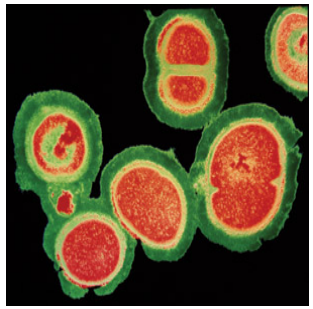
MRSA Control Programs

- Methods that can be employed in active MRSA **control programmes** are as follows:
  - Avoid use of **antibiotics** except where essential – unnecessary use has contributed to the development of the antibiotic **resistant strains**.
  - **Screen patients** pre-operatively. This is expensive but effective as it identifies those people who are particularly at risk.
  - Elimination of MRSA **before surgery** if at all possible. This is case where the use of powerful antibiotics to prevent infection is entirely justified.
  - **Non essential equipment** should be removed from operating theatres to minimise the role of equipment in contamination by contact.
  - Patients identified as MRSA positive should be placed at the end of the day's operating list. This avoids the **risk of infecting** uncontaminated patients.
  - MRSA contaminated patients should be allowed to **recover initially in the operating theatre** or in specially isolated areas.
  - Operating theatres should be **cleaned** especially thoroughly, using and effective and long lasting cleaning agent after treating an MRSA positive patient.



The role of Citrox in controlling MRSA

- **MRSA** is a dangerous problem and all possible techniques to **prevent its spread**, both to patients and to medical staff, should be deployed.
- **Citrox** products have been shown, microbiologically, to be **effective against MRSA**, and can have a major and positive influence on the problem.
- **Citrox** can be used **holistically** throughout various hospital facilities for hygiene procedures including:
  - Cleaning and disinfection of **instruments**
  - General disinfection of **hard surfaces** (walls, floors, working surfaces etc).
  - Cleaning and disinfection of **waste bins**, fabrics, curtains and other drapes.
  - **Personal hygiene** (where it is "kind" to the hands).
  - **Citrox** is unique in this field in that it is completely non-toxic, hypoallergenic and requires no special precautions in use or disposal.



"Nothing in the world is as powerful as an idea who's time has come."

Victor Hugo

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