

THE INNOVATION THAT DISRUPTS HOSPITAL HYGIENE





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WHY USE ANTIMICROBIAL SURFACES FOR YOUR HEALTHCARE FACILITY?

HOW TO CHOOSE **AN ANTIMICROBIAL SURFACE?**

- An antimicrobial surface contains an antimicrobial agent that kills or inhibits microorganisms and prevents them from growing on the surface of a material.
- The action of an antimicrobial surface is said **autonomous** and continuous regardless of any human intervention but cleaning/disinfecting process.
- ▲ In hospitals, hand washing is properly carried out between **30% and 85%** of the time, as for the disinfection of surfaces, it is properly carried out only 23% to 40% of the time.
- The use of antimicrobial surfaces combined with cleaning/disinfection protocols and regular hand washing will become a standard procedure in healthcare facilities to fight against Healthcare Acquired Infections (H.A.I).
- Obsease-causing viruses, bacteria, fungi and fungal spores can survive for long periods on objects and high touched surfaces in hospitals, and public spaces (from some hours to days, and around one month for the SARS-Cov-2 for instance).
- Antibioresistance: the misuse and too often incorrect use of antibiotics has contributed to the development and spread of bacteria that have become resistant to antibiotics. Therefore, the issue will more and more be to kill pathogens before they interact with humans.

Key Facts about H.A.I's

- 80% of infections are transmitted by hands
- The global rate of H.A.I / patient is **7%** in developed countries
- The global rate of H.A.I / patient is over **10%** in emerging countries
- The rate of H.A.Is in Intensive Care Units is **3-fold higher** in Brazil than in Europe
- H.A.Is contribute to a 8-fold increase in direct costs in Brazilian hospitals



THE NEED FOR ANTIMICROBIAL SURFACES IS NOW **ACKNOWLEDGED BY KEY OPINION LEADERS:**

"I do support innovation and progress in the field of infection control which are mandatory if we want to reach the next level of performance. I'm really interested in the efficacy and utility of antimicrobial surfaces and among them copperbased technologies which have proven their efficacy.

Pr Pierre Parneix - President of the French Hospital Hygiene Society, Member of the Academic Board @Clean Hospitals, Head of Infection Control @Bordeaux University Hospital

"Clean Hospitals will officially support MetalSkin's clinical study to evaluate antimicrobial surfaces in a clinical setting in a Brazilian hospital. (...) The purpose of the initiative is to increase patient safety and bring international attention to the need for an increased focus on hospital environmental hygiene."

Pr Didier Pittet, Director of ICP @Geneva Hospitals and Faculty of Medicine; President of Clean Hospitals.



- 2 loa reduction required on all 4 strains in 1 hour

REAL-LIFE CONDITIONS OBJECTIVE STATEMENT

▲ EXPERTS WARNING ▲

"Material and surfaces claiming antimicrobial activity are on the market for long time but the claim was essentially based on 2 current standards, the ISO 21702 and the ISO 22196 (...) And if you look at the conditions of essay, we are very far from the real use conditions."

Chris&ne Roques, Professor in Industrial Microbiology, Hygiene & Environment, researcher in microbiology at the Faculty of Pharmacy of Toulouse, Chair of the ISO/TC 330 Antimicrobial Surfaces @ISO → These 2 standards are not suitable for evaluating antimicrobial action in a healthcare facility.

"The in-vitro test protocol at the moment are extremely limited. Unfortunately, quite a number of companies are using them to demonstrate the efficacy of their surfaces, but when you apply themfor prevenying microbial growth in dry environmental condivions, those surfaces don't work whatsoever"

Jean Yves Maillard, Professor of Pharmaceutical Microbiology at the Cardiff School of Pharmacy & Pharmaceutical Sciences (Cardiff University, Wales) \rightarrow An efficacy assessed with these tests is most likely to prove to be inefficient in real use conditions.

POWERFUL



EFFICACY PROVED In Real **Environmental** Conditions

No impact on human beinas



Ease of care and maintenance

✓ Minimum performance required : 2 LOG REDUCTION IN 1H on 4 strains (Staphylococcus aureus, Escherichia coli, Enterococcus hirae,

\checkmark Future international standard \rightarrow ISO 7581 (ISO/TC 330)

ISO 22196 / ISO 21702

- +90% humidity
- 25°C to 35°C
- 24 hour forced contact time (film)
- No target level or efficacy



NOT REPRESENTATIVE OF REAL-LIFE **CONDITIONS - NO OBJECTIVE STATEMENT**

MetalSkin[®] IS THE BEST CHOICE

MetalSkin® is a **Powerful antimicrobial composite material** made out of a 92% copper alloy and polymers.

MetalSkin[®] has patented **3 technologies** to propose different solutions:



Industrial partners have developped products now available.

MetalSkin® meets the requirements of the NF S90-700 and under normal ambient conditions and within short contact times (<2H), gets the following results.



All these results are available on our website.



ON-SITE STUDY – METALSKIN COATING ST ROCH CLINIC MONTPELLIER

An on-site study carried out in the St Roch clinic in Montpellier (France) showed the following results

GOAL: Prove that combination of cleaning/disinfection protocol with antimicrobial Surfaces helps to lower the load of bacteria on the long term



• Sampling method with sterile silicone template and count-tact box

- 4 samples per week (Monday-Friday), variable schedule
- Incubation and counting according to traditional microbiology methods
 Protocol supervised by Professor Jean-Pierre Daurès (Biostatistician, Epidemiologist Faculty of Medicine of Montpellier / University Hospital of Nimes), developed by Marie-Gabrielle
- Leroy (Hygienist Clinique Saint Roch) and Jocelyne Paillisson (Microbiologist Labosud). • Samples and statements: Labosud (COFRAC accredited)
- Data analysis: Biostatistics Laboratory of the Faculty of Medicine of Montpellier

CONCLUSION: MetalSkin[®] represents the future of environmental hygiene as the missing link between cleaning/disinfection methods and hand hygiene.

"We do believe that (MetalSkin) products are a promising strategy to help reducing the risk of transmission of human pathogens both in the healthcare settings as well as in the community."

Pr Fernando Bellissimo Rodrigues, Associate Professor and Vice Head of the Social Medicine Department @Ribeirão Preto Medical School, University of São Paulo.













6 rooms 8 weeks 7 items

Outdoor Door Stand / Indoor Door Stand / Entrance Light Switch / Faucet Lever / Shower Grab Bar / Table Tray / Toilet Flap







WHERE TO USE ANTIMICROBIAL SURFACES ?





Surfaces that are **frequently touched** by a heterogeneous population.

EXPERTS ADVICE

"Some antimicrobial surfaces may play a rule in decreasing the micro bioburden overtime (...) it is essential that they do not replace cleaning and disinfection, they are together with cleaning and disinfection

"The biggest challenge for antimicrobial surfaces, especially in a healthcare environment, concerns high touch surfaces that are touched very frequently, several time a minute for example ... "

Jean Yves Maillard, Professor of Pharmaceutical Microbiology at the Cardiff School of Pharmacy & Pharmaceutical Sciences (Cardiff University, Wales)

Equipping your facility with technologies such as MetalSkin® will provide patients and healthcare workers with incomparable health safety by providing antimicrobial properties to the following contact points:



Public Areas

Bedrooms

• Whashbasins & sinks

• Siphons

Switches

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- Door handles
- Stair railinas / Handrails

• Door handles

Bedrails

Taps

• Grab bars

Desks

- Keybords & mice
- Grab bars
- Switches
- ...



Operating Rooms

- Taps
- Switches • ...

Siphons

• Whashbasins & sinks



• Grab bars

• ...

Toilets

- Toilet brushes
- Whashbasins & sinks

🛿 Already several Healthcare Facilities equipped in France: Clinique St Jean l'Ermitage in Melun, Clinique St Roch in Montpellier, Clinique de l'Oiseau Blanc in Mantes-la-Jolie, Hôpital St Anne in Paris, Hôpital Percy in Clamart, Hôpital Gentilly in Nancy...



• New large-scale study on the subject of antimicrobial surfaces underway at the University Hospital of Ribeirão Preto under the supervision of the University of Sao Paulo (USP), Prof. Fernando Bellissimo and supported by the World Organization Clean Hospitals

MetalSkin participates to several international and scientific organizations such as:







Press releases

Radio, Newspapers, Magazine, Web Magazines)

Speaker

- Conference on new standards in healthcare buildings,
- Paris Healthcare Week 2019

- Door handles Switches
- Toilet flushes
- Taps

• Siphons

- - Door handles
 - Door plates
 - Worktop
 - Bedrails











• +200 articles and programs (National Networks, Local Television,

• SF2H Conference on New Infection Control Standards, Strasbourg 2019

• Article on antimicrobial surfaces in «White Rooms», 2020 (Author) ASPEC Conference on Antimicrobial Surfaces, Paris 2021 InterClean Webinar on Antimicrobial Surfaces, 2021

• Clean Hospitals Webinar on Innovation in Infection Control, 2021

THE METALSKIN ECOSYSTEM



Our VISION: Antimicrobial Surfaces will be part of the environmental hygiene standards

Our GOAL: to provide the best technologies to protect people from contaminations!

"If hand hygiene and surface cleaning / disinfection are the breakes on the vehicle of Infection Prevention Control, MetalSkin® is their ABS"

Stéphane Penari, Founder & CEO of MetalSkin





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