



A new way to
contain hospital-
acquired
infections.

**COPPER
TOUCH
SURFACES.**

“Germs are a part of nature
and we cannot beat nature.

So hospital-acquired
infections cannot be totally
eradicated. But we can fight
it more effectively with copper
touch surfaces.”

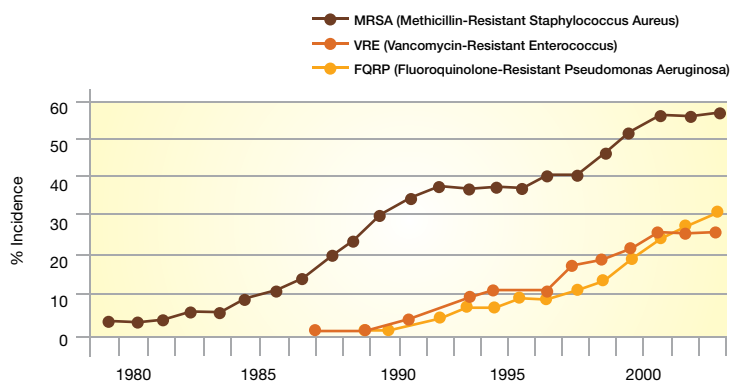
Time for a New Approach

In the 1850s, some 50 years before scientists discovered microbes, Florence Nightingale, a pioneer of modern nursing, discovered that her patients fared much better when the hospital environment was kept clean. She instituted a laundry service, rigorously cleaned all medical and hospital equipment, and had the floors scrubbed for the first time. The results were unbelievable: The death rates of patients suffering from cholera, typhus and dysentery came down from 42% to a mere 2%!

More than 150 years later, however, despite enormous advances in the field of microbiology and infection control, hospital-acquired infections still continue to plague the patients and hospitals at alarming levels.

UNITED STATES

- More than 2 million hospital-acquired infections such as MRSA per year ⁽¹⁾
- Nearly 90,000 deaths annually due to hospital-acquired infections ⁽¹⁾
- Resistant infections cost health facilities about USD 30 billion per year ⁽¹⁾



Infectious Disease Society of America, as derived from data collected by the Centres for Disease Control and Prevention

UNITED KINGDOM

- Each year, hospital-acquired infections cost the National Health Service in the region of 1 billion pounds ⁽²⁾
- Infections on average extend hospital stay by 11 days per patient ⁽²⁾
- At least 5,000 patients die of complications from infections they contracted in hospitals ⁽²⁾
- Each year, 300,000 patients contract a nosocomial infection.

ASIA

SARS outbreak: Between November 2002 and July 2003, Severe Acute Respiratory Syndrome (SARS), which began in November 2002 in China's Guangdong Province, caused 8,096 known infected cases and 774 deaths worldwide. The SARS epidemic sent shock waves around the world as it quickly spread to Hong Kong, Singapore and Canada.

World Health Organisation (WHO) warned the outbreak highlighted how new deadly microbes could spread quickly around the world, and it was a wake-up call to the real danger of emerging diseases.

Question: More than 150 years later since Nightingale's great achievement, it is time for another new approach. Is there a way to provide better protection to patients against hospital-acquired infections?

Nature's answer: Copper.

Antimicrobial Copper

Scientific research and historic facts confirm that copper and its alloys, brass and bronze, are naturally antimicrobial materials. These materials kill harmful bacteria and that has been recognised by the U.S. Environmental Protection Agency (EPA).



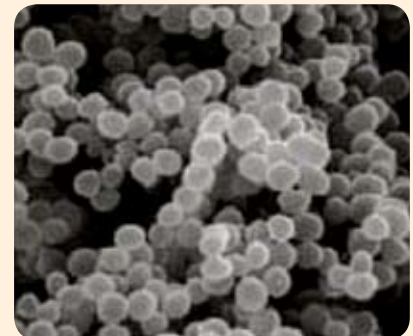
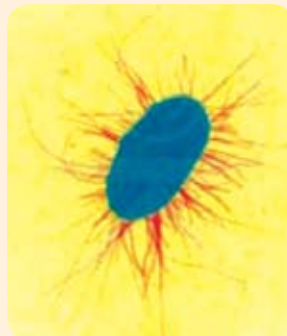
275 copper alloys, including brass and bronze, have been registered with the EPA as antimicrobial materials that kill bacteria.

EPA registration

275 copper alloys, including brass and bronze, have been registered with the EPA as antimicrobial materials that kill bacteria. The registration acknowledges claims that copper, brass and bronze are capable of killing harmful, potentially deadly bacteria. Copper is the first solid surface material to receive this type of EPA registration, which is supported by extensive antimicrobial efficacy testing.

The laboratory research performed under EPA-approved protocols demonstrated that copper alloy surfaces kill more than 99.9% of several bacteria known to be human pathogens within two hours. The organisms tested were:

- **Staphylococcus aureus**
- **Enterobacter aerogenes**
- **Escherichia coli O157:H7**
- **Pseudomonas aeruginosa** and
- **Methicillin-resistant Staphylococcus aureus (MRSA)**



MRSA is one of the most virulent strains of antibiotic-resistant bacteria and a common cause of hospital-acquired infections.

Historic evidence

Before anyone recognised that microorganisms existed, the Egyptians, Greeks, Romans and Aztecs used copper compounds for good hygiene and to treat disease. Egyptians used copper to sterilise drinking water and wounds. Hippocrates treated open wounds and skin irritations with copper. The Romans catalogued numerous medicinal uses of copper for various diseases. The Aztecs treated sore throats with copper, while people in Persia and India applied copper to treat boils, eye infections and venereal ulcers.

Touch surfaces: Source of infections

In healthcare facilities, surfaces in proximity to patients are of the most concern. 80% of infectious diseases are spread by touch. A hand contaminated with the influenza A virus will contaminate the next seven surfaces that are touched.

Not all hospital-acquired infections are preventable but UK infection control teams recognise that a 15% reduction could be achieved through a series of infection control measures, including improved hygiene. This could also lead to savings of approximately 150 million pounds a year.

Copper touch surfaces

Many of the commonly used materials in healthcare facilities such as stainless steel have proven to have comparatively little or no adverse effect on harmful bacteria.

Replacing frequently touched surfaces with copper or high-copper alloys such as brass and bronze, which are naturally antimicrobial, can be an effective infection control measure. Such a measure can complement other infection control practices such as frequent hand-washing, patient screening and isolation, and improved cleaning.

Frequently touched surfaces in hospitals that can be made from copper or copper alloys include:

- door handles
- light switches
- grab rails
- dressing trolleys
- faucets
- counter and table tops
- push plates
- bed rails
- intravenous (IV) stands
- dispensers (alcohol gel, paper towel, soap)
- sinks

These touch surfaces are all potential reservoirs of harmful microbes. Reducing the number of live germs on these surfaces can possibly control the spread of MRSA and other sources of hospital-acquired infections.





Conclusion

The use of copper alloys for frequently touched surfaces as a supplement to existing standard infection prevention measures, such as, hand-washing and disinfection regimens, has far-reaching implications. Potential applications, which include door and furniture hardware, bed rails, intravenous (IV) stands, dispensers, faucets, sinks and work stations, can help reduce the presence of disease-causing bacteria in hospitals.

The use of a Copper Alloy surface is a supplement to and not a substitute for standard infection control practices; users must continue to follow all current infection control practices, including those practices related to cleaning and disinfection of environmental surfaces. The Copper Alloy surface material has been shown to reduce microbial contamination, but it does not necessarily prevent cross contamination.

The EPA registration acknowledges claims that copper, brass and bronze are capable of killing harmful, potentially deadly bacteria. Copper is the first solid surface material to receive this type of EPA registration, which is supported by extensive antimicrobial efficacy testing.



International Copper Association (ICA)

ICA is the leading organisation for the promotion of copper worldwide. The Association guides policy, strategy and funding of international initiatives and promotional activities. Headquartered in New York City, ICA operates in 30 worldwide locations through a network of regional offices, and copper development associations and centres to execute programmes and initiatives.

International Copper Asia, Ltd (ICAsia)

ICAsia is one of four world-wide operating arms of ICA; its regional head office is located in Singapore. It maintains a network of ten offices in Australia, China, India, Japan and South East Asia.

HEADQUARTERS

International Copper Association, Ltd
New York
E-mail : ica@copper.org
Website : www.copperinfo.com

ASIA

International Copper Association, Ltd
Singapore
E-mail : info@copper.org.sg
Website : www.asia.copper.org

AUSTRALIA

Copper Development Centre • Australia Ltd
Sydney
E-mail : acic@copperdev.com
Website : www.copper.com.au

CHINA

International Copper Association
Shanghai, Beijing & Guangzhou
E-mail : icash@copper.org.cn
Website : www.copper.org.cn

INDIA

International Copper Promotion Council (India)
Mumbai
E-mail : info_copper@icpci.org
Website : www.copperindia.org

Indian Copper Development Centre

Kolkata
E-mail : indcop@vsnl.com
Website : www.indiancopper.org

JAPAN

Japan Copper Development Association
Tokyo
E-mail : info@jcda.or.jp
Website : www.jcda.or.jp

SOUTH EAST ASIA

Copper Development Centre • South East Asia
Singapore, Indonesia, Malaysia & Thailand
E-mail : info@copper.org.sg
Website : www.copper.org.sg