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Surfactants can cause Resistance
Reducing the development of antibiotic resistant bacterial populations is no longer just an issue for hospitals. We all need to do what we can, because the same conditions that promote resistance operate not only in hospitals but in other environments as well.

Petroleum-based detergent surfactants are used for cleaning many indoor environments. They have toxic effects on microbial populations; since most are either bactericidal or bacteriostatic. When bacterial populations are exposed to sub-lethal doses, as can happen during routine cleaning and by the action of residual cleaning compounds left on environmental surfaces, and in our waste water, they can become resistant to the antimicrobial effects of the cleaner.

Microbial populations that develop resistance to petroleum-based detergent surfactants can also become more resistant to antibiotics of all kinds. Because of this relationship between surfactant and antibiotic resistance, minimizing antibiotic use is not sufficient as a defense against resistance. In fact, European data indicates that use of surfactants (measured by weight) is more than a thousand times greater than the consumption of antibiotics.

The bottom line is that antibiotics

will continue to be effective for humans against disease only if pathogenic bacteria do not become resistant. Unfortunately, our waste water treatment plants are now emitting bacteria into the environment that are encoded with genes resistant to petroleum based detergent surfactants as well as many antibiotics. Those microbes that develop resistance also have the ability to transfer these traits to future generations as well as to other microbial organisms.

Not all bacteria are enemies

Bacteria are the basis of life – we are also dependent on having healthy populations of beneficial bacteria. These microbes have the ability to compete out those pathogens that have developed bactericide and antibiotic resistance.

But this can only occur if we stop attacking microbial populations indiscriminately with chemicals that leave toxic residues that persist on environmental surfaces and in our

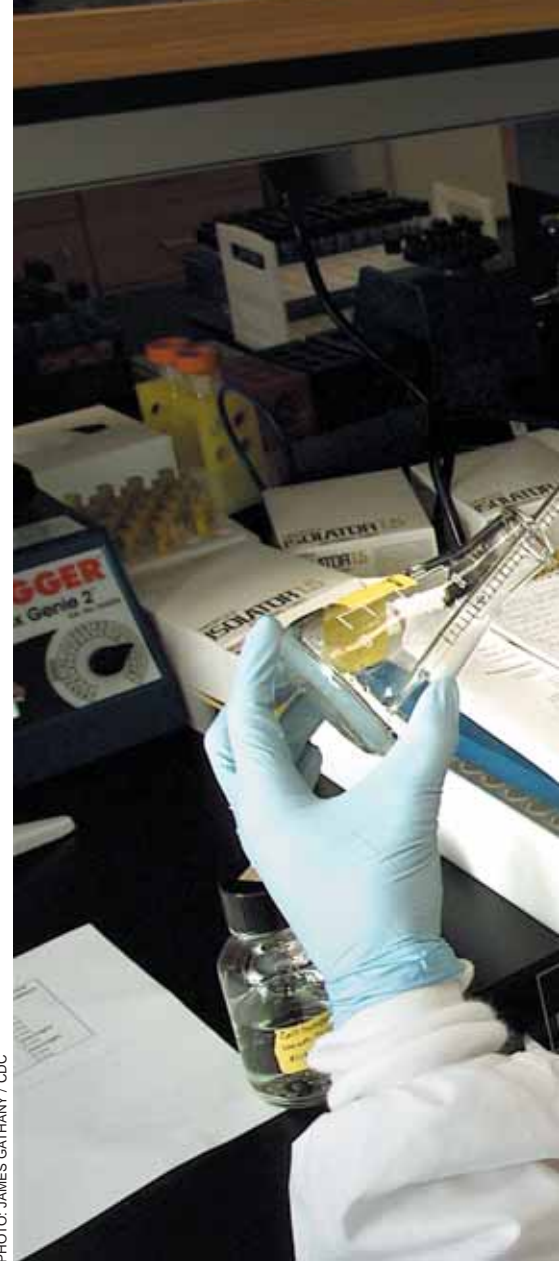


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waste water.

Potent chemistry lingers on surfaces

In an attempt to cope with antibiotic-resistant microbial populations, as well as with viruses and spore forming pathogens that many disinfectant clean-

Antibiotic Resistant Bacteria

An Issue for Everyone



ers have no proven efficacy against, very potent disinfectants are being introduced at an alarming rate, with little regard to the long-term effects of their use. The health care response to pathogens has focused both on enhancing cleaning practices and increasing the potency of disinfectants.

Unfortunately, there is little scientific evidence that disinfecting environmental surfaces in health care settings has reduced the number of hospital acquired infections. Typically, one step disinfectant cleaners are usually used for cleaning and disinfecting. Some healthcare providers are using a two-step process involving cleaning first. Then disinfecting.

But if surfaces are not completely clean prior to disinfection, and when recommended contact times are not achieved, surface disinfection is not complete. Furthermore, the cleaning com-

pound and disinfectant residues left on environmental surfaces, and in our waste water, act on the surviving microbes and can cause microbial resistance.

Fortunately, new cleaning strategies involving detergent free cleaning and safer, more dilute forms of stabilized sodium hypochlorite offer the potential of combating the bacterial resistance dilemma. With these methods, the bulk of the pathogenic bacteria problem is solved by removal during efficient cleaning. The remaining population is oxidized with dilute sodium hypochlorite and there are no lingering surface contaminants, thereby avoiding the development of resistant bacterial strains.

Cogent Environmental Solutions has created a broad range of cleaning products for health care facilities, schools, professional and home use. All of the products contain only naturally

occurring ingredients, free of any petroleum-based ingredients, detergent surfactants, phosphates and volatiles.

Approximately 15 per cent of the total population has increased sensitivities to even very low levels of chemical exposures. These products are independently reviewed and certified for use by and around hypersensitive individuals. The company also provides Complete Ingredient Disclosure on all cleaning product labels. To protect public health Cogent has found a way of making diluted sodium hypochlorite safe to use and handle with closed, looped packaging, enhanced cleaning and after-dilution stability. The company supports the safe use of sodium hypochlorite because of its potent oxidizing power and rapid decomposition, which minimizes the potential for the development of bacterial resistance.