

MRSA and IRONMONGERY

In the space of just 20 years, a newly discovered “Super Bug” has become the scourge of the NHS, and has prompted a re-think in the way hospitals are built and operated.

The bug – Methicillin Resistant Staphylococcus Aureus, and commonly known as MRSA – has become a high risk problem to anyone staying in hospital. The problem is this disease is resistant to antibiotics.

Staphylococcus Aureus bacteria are commonly carried on the skin or in the nose of healthy people. Occasionally, these bacteria can cause infection – indeed, in the USA, they are one of the most common causes of skin infections such as pimples and boils. Most of these infections can be treated without antibiotics.

The result is that people going into hospital for routine surgery are putting themselves at risk to a far more dangerous problem – MRSA.

POLITICAL ISSUE

As is often the case, this has become a political issue, and the Department of Health has reacted positively to the concerns of everyone in the country that their already anxious stay in hospital is not exacerbated by a further potentially more dangerous problem.

The Government has produced a booklet called “Towards Cleaner Hospitals and Lower Rates of Infection”.

This summary of action issued by the Department of Health, states that “cleanliness is one of the five most important issues for patients”, and it also tells us that 40% of the staphylococcus aureus bloodstream infection in hospitals in England are caused by MRSA.

Within hospitals, MRSA transfer is predominately from human contact with patients – in other words, staff failing to wash their hands!

Architects have enough to concern themselves over in the design of a building – materials, regulations, planning. The last thing they need is to make studies of human biology, bacteriology and pathology in order to get the job absolutely right. So – understandably – they rely on the information given to them through various sources, some of which are better than others. This is where things can go wrong, resulting in under – or, more likely, over-specifying product finishes.

STAYING SINGLE

High on the list of possible measures to counteract the transfer of MRSA is the construction of single room wards, which have the added benefits of protecting patients’ privacy and dignity.

Indeed, the Government states: “In delivering more single rooms, we will work with architects and the construction industry to re-think design and modernise construction techniques. This will reflect the fact that control of infection needs to be designed into hospitals to deal with the new disease and support new medical techniques”. The construction industry has picked up on the fact that there is a risk – albeit very small- that the disease can be picked up from door handles and the like. Understandably, specifier's are trying to ensure that the handles they select are as safe as they can possibly be.

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Various options are available. These include impregnation with triclosan – a substance which is thought to be a carcinogenic, is registered by the United States Environmental Protection Agency as a pesticide, and can enter our bloodstream. This substance can be found in many everyday items such as toothpaste, mouthwash, lipsticks, children's toys and host of other products – so it easily absorbed into our bodies.

This, in turn, has the effect of destroying the beneficial bacteria that fights harmful pathogens – which causes genetic mutations within our bodies. This then makes the body resistant to the benefits of antibiotics... in other words; the human immune system is made defenceless against MRSA.

The second option is an anti bacterial product which makes use of ions. It does not have the worrying side-effects that can be found in triclosan, however, it is marketed as enhanced protection. It does remove the responsibility of a comprehensive cleanliness regime for health authorities and their staff. As it is a coating, this option is only as good as the material to which it is applied.

The preferred surface, to harbour the least bugs, is that of a glass-like, non-porous material. This brings us to the third option – nylon polyamide – which has the dual benefits of no side effects and a non-porous finish.

If we take on-board the Government's advice that regular cleaning is the solution, the architect and specifier would be well advised to choose materials that are easily cleaned, and maintained.

In tests carried out on Nylon smeared with staphylococcus aureus, it was observed that organisms on the surface were already dying after a period of 24hr – this was because the nylon surface is similar to a plate glass surface.

However, organisms on brass, stainless steel and aluminium surfaces were found to be still capable of developing after a 72hr period.

The Government is emphasising the fact that the most effective method of combating MRSA within hospitals is through a thorough cleaning regime. Regular cleaning of floors, walls, sanitary ware, architectural ironmongery and, indeed, hands will – the Government and I believe – greatly help reduce the possible risk of MRSA infection.

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