Infection Control in the Operating Theatre: The Added Threat of Creutzfeldt-Jakob Disease (CJD)

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Infection Control in Europe

The need for better infection control in hospitals in general, and operating theatres in particular, is both necessary and urgent. Studies undertaken by scientific institutions in the EU have recently shown the extent of the problem of hospital infections. They have found that 8.5 percent of all patients and 25 percent of all intensive care patients encounter some form of infection whilst in hospital, causing substantial human suffering. There are also major cost considerations; hospital infections are estimated to cost the British National Health Service a staggering £1 billion per year.

The science of infection control is developed to different extents across Europe. However, on average, the standard is well below that in the United States. The Nordic countries have sophisticated infection control principles integrated into the working practices of hospitals. The standard is much lower in countries such as Spain and Italy, although it is starting to improve. In the United Kingdom, there has been some highly acclaimed research into infection control. However, these findings have not traditionally been transferred into improved hospital practices. This is beginning to change. In France and Germany, too, there have been a series of public health scares that have reinforced the general trend towards more effective and rigorous infection control practices.

The New Threat of CJD

Creutzfeldt-Jakob Disease (CJD) is an infectious, degenerative, progressive neurological disorder. Whilst this disease is thankfully very rare, there is no known treatment and it is fatal. Furthermore, testing difficulties mean that diagnosis of the disease remains a major challenge. Unlike many other infectious diseases, the agent causing CJD is not a bacteria or a virus. It is caused by proteins known as 'prions'. There is a degree of uncertainty regarding the sources of CJD. It can be genetic, with an incubation period of up to 40 years. However, it is estimated that 80 percent of CJD cases are not from genetic sources. A majority of cases appear to be 'sporadic' (i.e. with no specific identifiable source). However, increasing attention is being given to one particular source: transmission within hospitals. This is an area where definite action can be taken to reduce risks.

The prospect of CJD spreading within hospitals is a frightening one. The recent investigation by the BBC’s Panorama programme (November 11, 2001) drew attention to the serious risks of this occurring in the UK. The programme alleged that the UK government has suppressed a report that heavily questioned the reliability of current decontamination practices in terms of providing an effective barrier against transmission. Professor Michael Banner, Chairman of the CJD Incidents Panel, commented: 

"We need to ensure that having closed off, as we hope, the route of infection from meat, we now close off, as best we can, the route of infection that may come through surgery: human to human transmission."

The transmission of CJD through surgical instruments is known to have occurred in a very limited number of cases. However, it is incredibly difficult to identify causality, partly because of the very long incubation periods but also because hospitals do not have adequate records to identify which patients have been operated on with which surgical instruments. In France, a working group has been set up by the healthcare products safety agency, AFSSAPS, examining the disinfecting and sterilisation of reusable medical devices. There is also major concern in the UK about the illicit re-use of single-use medical devices.

Health Threats and Market Opportunities

It is clear that hospitals will have to develop more rigorous approaches to infection control procedures, particularly in terms of tracking reusable medical devices. However, it is also clear that there will be an inevitable increase in the demand for disposable surgical products. This is likely to be the case both for surgical instruments and also for items such as surgical drapes and gowns. These items are often reusable in Europe (unlike in the US), but can play a significant role in preventing (or causing) infection in operating theatres. Evidence suggests that the proteins that cause CJD are likely to survive the laundry process. There has already been a circular published by the French government suggesting that if there is a slight suspicion of a disease such as CJD, then single-use drapes and gowns must be used. However, the problem with this is that it may be difficult to ascertain in advance the likelihood of infection risk. It is not only CJD that poses a major risk. There are also ongoing concerns about HIV. Also, there was a recent tragic case in a Scottish hospital of a patient catching Hepatitis B from a surgeon.

One may wish to argue that a major move away from reusable products towards single-use products is perhaps an over-reaction, which may have some major cost and environmental drawbacks. There is certainly no doubt that manufacturers of disposable surgical products will be able to grasp the issue of CJD and use it for marketing purposes. However, there is also no doubt that action needs to be taken to rectify some extremely archaic and unacceptable approaches to infection control. It may take a major crisis such as CJD for hospitals to recognise that far less headline-grabbing hospital infections are causing significant personal suffering and financial costs on a regular basis. Most people involved with healthcare should recognise the notion of prevention being better than cure.