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Johnson Medical Ultraclean OT - Breakthrough in Technology

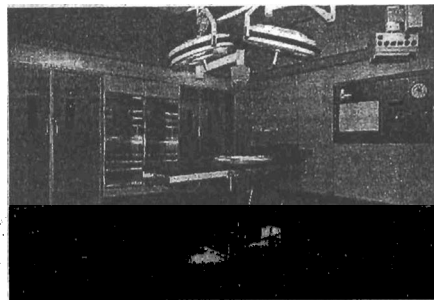
Hospital acquired infections are likely to complicate illness, cause anxiety and discomfort, and can lead to death. Infections of the surgical wound are one such common injuries and also is an important cause of morbidity and mortality for patients undergoing surgery. The delay in recovery and increased hospital stay too has economic consequences.

Since, the air borne contamination is mainly derived from the personnel in the operation theatre and their activities, it is essential to have an aeromicrobiologically clean zone, in which all surgical operations could be carried out without imposing changes of procedure or restriction of access.

According to the International Federation of Infection Control, it is now accepted that Ultra Clean Air (<10 cfu/m³) reduces the risk of infection in implant surgery. Thus there is a need for Indian healthcare system to the type of UltraClean operating theatre.

As a highly specialised medical engineering turnkey builder, Johnson Medical is focused on providing a range of products to cater to the needs of the operating room and critical

only a highly efficient functional and ergonomic environment, but also equip-



ment and finishes of the highest quality and standards, especially in the ventilation areas.

The main objective relates to designing a good ventilation system, which is capable of reducing post-operative wound infections. When it is widely proved that normal ventilation system can be easily affected by the level of activity in the operating theatre, the hospitals should have systems that is capable of achieving consistent results.

Johnson Medical Guided Airflow Ventilation System, eliminate the necessary to invest in expensive ventilation, the planning and designing of which in operating theatres is crucial to lower infection rates and operating costs. Ventilation

ing an operating theatre that provides ergonomically good layout, ultra clean



systems, low operating and installation costs. The solutions adhere to well-defined national and international standards on the overall function and ventilation standards of the operating theatre.

The Johnson Medical Guided Airflow Ventilation System, which is employing the slit injection technology, are capable to achieve a bacteria count of 0.5 cfu/m³ with an exceptionally low airflow rate of 1800 m³/h. (Colony forming unit (CFU) is defined as a mass of bacteria which is the result of multiplication of one or more organisms).

Though computational fluid dynamics (CFD) approach, which made possible by high speed personal computers and the application of the laws of fluid dynamics, among other things, it is comparatively much costlier than Johnson Medical Ventilation System.

Further, Johnson Medical Surgical Unit, a comprehensive offering, addresses the significant challenges that are encountered in the co-ordination of heating, ventilating & air conditioning (HVAC) and medical gas plumbing during constructions or renovations.

Johnson Medical has in-depth understanding of staff work flows and patients' movement, with which it plans an operating theatre department with the best possible floor-layout and an optimal working environment for the

hospital staff, the highest levels of staff and patient safety, and savings in running costs over time.

Johnson Medical also offers specialised consultation services. It conducts detail studies on an operating theatre department, examine the layout, functionality, and usage patterns and work environment

Its Medical Surgical Unit generally includes medical pendants, ceiling fixture, ventilation system, operating lights, operating table and various medical equipment support systems depending on the application. The Johnson Medical pendants are patented by the company, based on cus-

tomers' requirement on the number of gas outlets and electrical points.

Patented ceiling fixture for Johnson Medical's Anaesthetic Equipment (Dry) & Fluid (Wet) Pendants and Surgeon Pendant caters to all suspended equipment in the operation theatre including surgical lights and microscopes, with add-on mountings to allow expansion of surgical techniques.

Its triple-glazed one-way window allows filtered natural light in the OT to reduce the feeling of claustrophobia or work-stress after long hours. Designed with a vacuum tap to eliminate moisture and condensation in tropical climate.



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Johnson Medical Guided Airflow Ventilation System provides a 3 directional sterile airflow that can efficiently control the CFU down to 0.5 cfu/m³ within the wound area. This ventilation system successfully produces a clean environment covering a wide area in the operating theatre.

Some of the special features of the system include: Unique double-wall ventilation exhaust system reduces airflow and turbulence to enhance the cooling effect of the entire wall in hot climates and curved ceiling extends the reach of sterile air provided by the Guided Airflow™ venti-

(Look forward to reading more information on Johnson Medical's other products and services in the forthcoming issue dated December 16-31, 2004)

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International Infection Control Standard

Type of Operating Theatre	Condition	Criteria (CFU/m ³)
Conventional	Empty During operation	< 35 < 180
UltraClean	Empty During operation	< 1 <20 (periphery) <10 (centre)

Source: Infection Control Handbook for the Asian Healthcare Worker

care areas. The company provides solutions including Ultraclean OR, Versatile Pendants and containerized/mobile hospitals.

The company provides not

is considered to be the main contributor to the function and efficiency of an operating theatre.

Johnson Medical offers an end-to-end solution right from planning and design