

# Fabric technology helps protect patients and healthcare workers

Advances in medical fabrics technology improve protection for patients and healthcare professionals.

The discussion continues about single-use, disposable materials versus reusable fabrics for hospital and surgical environments. Protection from infection and safety for patients and healthcare professionals are major concerns. Cost, regulations and the environment are also concerns for medical facility administrators.

Multiple factors must be weighed when making a decision to purchase surgical gowns and drapes for healthcare professionals and patients including:

- The required level of barrier protection from fluids, particulates and microorganisms to reduce the risk of surgical site infections
- Material breathability and garment construction for physical comfort and the ability to remain focused during medical/surgical procedures
- Appropriate and safe disposal and proper waste management for minimal impact on the environment

## Wovens versus nonwovens

Over the last two decades, many studies have been conducted comparing the advantages and disadvantages of the woven and nonwoven materials used for surgical gowns and drapes.

The need for improving the level of protection has increased with the rise in infectious diseases. And this need is greater in countries where economic factors come into play and seriously inhibit good healthcare and infection control practices.

Moylan *et al*<sup>1</sup>, in a study of 2181 clean and clean-contaminated general surgical operations, showed that there was a significant reduction in the post-operative infection rate in both categories of operations when a disposable gown and drape system was used compared with a cotton system. The risk of developing a wound infection was 2.5 times greater with the cotton system than with the disposable system. The disposable gown and drape system used in this study was made with DuPont™ Sontara® spunlace medical fabric. The results of this study led to the transition from cotton reusables to single-use gowns and drapes in the USA, beginning over 20 years ago. Now, over 80 per cent of the gowns and drapes used for surgical procedures in the USA are single-use products.

## Advanced and affordable

Advances in nonwovens technology have improved barrier

protection and comfort for single-use, disposable protective garments. DuPont continues to offer the global marketplace Sontara® Softesse™



medical fabric for use in single-use gowns and drapes. This fabric, un-reinforced or in fabric-reinforced or film-reinforced constructions, has become the industry standard for the healthcare industry, providing excellent barrier protection and comfort.

DuPont is helping to meet the need for more customised nonwoven medical fabrics with improved barrier protection and comfort. A unique bi-component process, using the company's proprietary Advanced Composite Technology (ACT), is now online at a new nonwoven manufacturing facility in the USA. With nearly 20 new patents for this technology, DuPont can blend two different raw materials to create medical fabrics with ideal physical properties to meet specific needs.

The first medical fabric produced using this new technology is DuPont™ Suprel™ for surgical gowns and drapes. 'Suprel™ is the first in a line of innovative products from DuPont that will raise the bar for protection and comfort in medical fabrics,' said Dr Howard Corcoran, technical specialist for DuPont Medical Fabrics. 'The composite fabric technology will allow us to create an array of fabrics in direct response to the evolving needs of the global medical community.'

Affordable improvement in protection for global healthcare professionals and patients is now possible with the DuPont Advanced Composite Technology process. To meet the spectrum of needs from the operating theatre to the emergency room, customised applications for nonwoven, single-use medical and surgical garments can be developed. ●

**Reference 1:** Moylan J A, Fitzpatrick K T, Davenport K E, 'Reducing wound infections. Improved gown and drape barrier performance', *Arch Surg* 1987, 122-152-157.