Medical Fabric Performance

STAMP 2010
(Sustainable Textiles & Medical Protections)
Total Healthcare: 2.1 billion square meters
Gowns/Drapes (75%) 1.580 billion square meters

- 900 million square meters (33%)
- 520 million square meters (10%)
- 160 million square meters (57%)

Diagram showing:
- Spunlaid
- Spunlace
- Wetlaid
Medical Fabrics

Reasons for Use
- Barrier to fluids
- Patient from Clinician
- Clinician from Patient
- Infection protection for both patient and clinician
Preventing Infection

Environment  Patient

Caregiver
Infection Control

Healthcare-Associated Infections (HAI)
– A leading cause of death in the U.S.
– 1.7 million HAI’s in 2007
– $28 - $33 billion annually in direct medical costs

Source: Center for Disease Control, March 2009
Healthcare - Associated Infections

Pathogens can be transported on clothing and other medical fabrics
- Survive as long as 1 - 90 days on textiles

“Super-Pathogens” require 100% protection 100% of the time

Single use medical fabrics provide the clinician the safety of knowing the contaminated gown or drape will not be used again
Protective Clothing

All medical fabrics are held to the same standard: AAMI/PB70 “*Liquid Barrier Performance and Classification of Protective Apparel and Drapes Intended for Use in Health Care Facilities.*”

– This standard creates a system of classification and minimum requirements based on liquid barrier performance for protective apparel and drapes used in health care facilities.
Protective Clothing...continued

- The guideline specifies a reliable method for testing and labeling protective apparel and provides an understanding of barrier properties to assist health care personnel select the appropriate product for a particular task.

- Four laboratory tests are used to identify and understand liquid barrier properties: Spray Impact Penetration Test, Hydrostatic Head Test, ASTM F1670 and ASTM F1671.
Four Levels of Protection

Level 1: Very light fabrics for little to no contact with blood & bodily fluids

Level 2: Medium weight fabrics for light contact with blood & bodily fluids

Level 3: Heavy fabrics for moderate exposure to blood & bodily fluids

Level 4: Coated fabrics for highest level of protection to moderate exposure of blood and bodily fluids.
Single-Use Reality Check

- Infection Control
- Comfort
- Cost
- Environmental Responsibility
Performance of Single-Use Fabrics

- Infection Control
  - Higher protection levels
  - Consistency of properties
  - Convenient & Dependable
  - Environmentally Responsible
  - Multiple fabric technologies to select from and over 25 years of industry use
Reality Check: Infection Control

Fewer HAI’s attributed to single-use

Consistent properties
  – Reusable textiles—barrier protection and/or efficacy could drop with each laundering

Disposability

Super-pathogens
Reality Check: Comfort

- Lightweight
- Breathable
- Functional
  - Drapeability, flexibility and durability
- Peace of Mind—barrier properties remain intact!
Reality Check: Cost

- Takes 5-7 reusable gowns to do the work of 1 single-use gown

- A reusable gown has a life-span of 22.6 uses in the typical hospital setting
Reality Check: Environmental Responsibility

At first glance... reusable's look like the obvious choice, but in the real world they only pass the environmental burden on to other members in the chain (e.g., wastewater treatment facilities)

Energy, natural resources and toxic chemicals needed to clean and sterilize reusable's greatly exceed the environmental impact of disposable drapes & gowns.

Don’t forget—both products are eventually disposed of.
Single-Use Reality Check

- Infection Control
- Comfort
- Cost
- Environmental Responsibility
THANK YOU