

EMERGING TRENDS AND OPPORTUNITIES OF MEDICAL TEXTILES IN HEALTHCARE INDUSTRY



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Medical Textiles :

- Textiles has always been a part of Healthcare
- Medical Textiles are products and constructions for Medical applications
- As Healthcare is growing, off take of Medical Textiles is also on increase
- The drivers for future of this industry are expected to be Asian Countries like India and China.

Emerging Trends in Healthcare Industry :

- Indian Healthcare industry size is \$17 million and is growing by 17% to 20% per annum.
- Estimated to reach \$ 36 billion by 2012.
- Revenue generation by Private hospitals is likely to increase to Rs 161440 crores by 2012.
- Current level of same is Rs 71300 crores.
- Healthcare spending shall contribute 8% GDP by 2012
- Relatively, Medical Textiles shall also double to Rs 3388 Crores by 2012 (Current level is Rs 1822 crores.)
- Patients from abroad are attracted by high quality and low cost medical treatment in India

Emerging Trends in Healthcare Industry.....

- Indian Healthcare industries are at par with international standards
- Consumers becoming more knowledgeable about what is available in Market and more demanding about quality and service
- The typical Indians are looking at clinical outcomes, with a focus on success rates and infection control similar to those of their US counterparts
- Hospitals are going for Accreditations, certifications.

The Apollo Hospitals Group

- Founded by the visionary Dr. Prathap C. Reddy
- For over 26 yrs, Apollo has continuously excelled and maintained leadership in Medical innovation, World Class clinical services and cutting edge research
- Dr. Prathap C. Reddy has been conferred with the Padma Vibhushan award by Government of India.
- Network of Over 8500 beds and 4000 top class clinicians and total employee strength of 60000 professionals.
- Clinical excellence, ensuring every year patients from over 55 countries heading to Apollo.
- The group has 7 JCI accredited hospitals.

The Apollo Hospitals Group.....

- 7,50,000 major surgeries and over 10,00,000 minor surgeries with exceptional clinical outcomes, done.
- From day one, Apollo brings in new technologies first in India.
- Latest additions include, Cyberknife, Novalix TX, PET CT and 320 CT Slice Scan.
- Apollo Reach Hospitals, projects coming up to cater semi urban and rural India
- Health Hi way - a health network (resource pool)
- We want to reach entire India through telemedicine.
- Release of The Apollo Postage Stamp by Govt. of India (Nov 2009)
- “Touch a Billion Lives” is our Focus now.

Textiles – Medical meets Textiles:

- Patient care and Patient safety are prime importance to hospitals
- To achieve this - next generation, hi-end and innovative Medical Textiles Products are needed play a vital role.
- Great transformation in mode of treatment offered necessitates to go for non wovens.
- Medical Textile Products provides comfort, safety and hygiene in patient care.

Textiles – Medical meets Textiles.....

- Medical professionals recommend high performing products
- Prevent hospitals acquired infection and protect against viruses
- Hospitals look for absorbent, impervious material, no fluid strike through, and lintless

Hospitals moving towards Non Woven. Why ?

- Better breathing and more hygiene and impervious.
- Changed Medical practices necessitates to go for nonwoven.
- Reduce cross infection (Infections is worry to hospitals)
- Repellent, Fire resistant, lintless, comfort, cool.
- Barrier to bacteria & infection.
- Healthcare workers becoming more aware
(safe for patients, Doctors and Nurses).

Hospitals moving towards Non Woven. Why ?...

- Proven sterilization performance.
- Single use, disposable (No washing and mending).
- Abrasion and puncture resistant.
- Light weight, soft, Strong.
- Non woven Drapes reduce clean up time.

Medical Textiles applications include:

- | | | |
|--------------------------------|---|--|
| Health care / Hygiene products | - | Surgical gowns, masks, Caps,
Wipes, Incontinence pads, Drapes,
protection wears |
| Implantable | - | Sutures, Vascular grafts,
Artificial joints, Ligaments,
Heart valves, Spinal column
cushions, Filters etc., |
| Nonimplantable | - | Wound dressings,
Swabs, Bandages, Plasters etc., |
| Extracorporeal Devices | - | Artificial Kidney, Artificial Liver,
Mechanical Lungs |

How Hospitals get benefited by usage of these Medical Textile Products:

- Improvement in healthcare delivery
(by innovation in Medical Textile Products)
- Comfort and Convenience to Patients
- Reduce Healthcare cost.
- No laundry hassles (washing one ton of Linen needs 7 ton of water)
- Easy Logistics
- Safe Environment (Infection free)
- Less stay of patients in hospitals
- Enhance effectiveness in healing
- Healthcare workers away from airborne infections

Huge Market for Medical Textiles :

- An estimate indicates World Market for Technical Textiles and Non woven is 23.8million tons, with a value of \$126 billion by 2010.
(It was estimated 1.5 million World wide in 2000)
- Market size of Medical Textile is in the range of Rs 2500 crores and expected to go upto Rs 4000 crores by 2012-2013
- Consumption of Medical Textiles components to cross Rs 2200 crores by 2012-2013
- Domestic production (currently low technology products only).
SITRA (COE) encouraging Medical Textiles Production

Huge Market for Medical Textiles.....

- Demand for hi-tech products met predominantly by imports currently (An area to tap)
- India & China are the drivers for future growth of Medical Textiles
- Medical Devices expected to touch \$ 1.7 billion in 2010 -2011.
- Bandages & Disposables alone pertain to 25% of Total Medical Textiles market (estimated)

Estimated Market sizing for Meditech (2012-13)

Sl. No	Item Description	Domestic Consumption (estimated) Rs. In Crores
1	Surgical Disposables	42
2	Surgical Dressings	1000
3	Sutures	415
4	Artificial implants	249
5	Baby Diapers	193
6	Incontinence Diapers	46
7	Sanitary Napkins	1300
	Total Value	3245

Government's Assistance:

- **Govt's schemes:**

- ie., Technological upgradations,

- COE's encouragement,

- Promoting Textile parks,

- Subsidy in Capital and interest,

- Concession in Govt. Levies.

Deterring Factors for Medical Textiles growth in India:

- Cost involved
- Lack of right kind of Raw Materials
- Lack of Customised Production
- Less awareness of Hygiene
- Disposing of disposables (Landfills / Incineration)

Business cases (Some Interesting Studies):

Fibre based Materials led to new applications

- Bio glass in Tissue Engineering
- Cell growth
- Medicated bandages
- Resin and Glass Fibre (Ortho)
- Nerve conduits

Smart wound care management products:

- Bandages & Dressings is a Big Market
- Current estimate (World wide)
 - 9 million chronic wounds
 - 177 million cases of diabetes
 - (10% to 15% patients will develop ulcers at some point)
- Rs 1000 crores potential estimated for wound care management products (2012-2013)
- Most of innovation happen in bandages
- Not mere bandages, but aid in healing process and make the same quick & comfortable.
- Pre fabricated ready to use products
- 300 Types of Products for different applications

Smart wound care management products.....

Advanced Dressings :

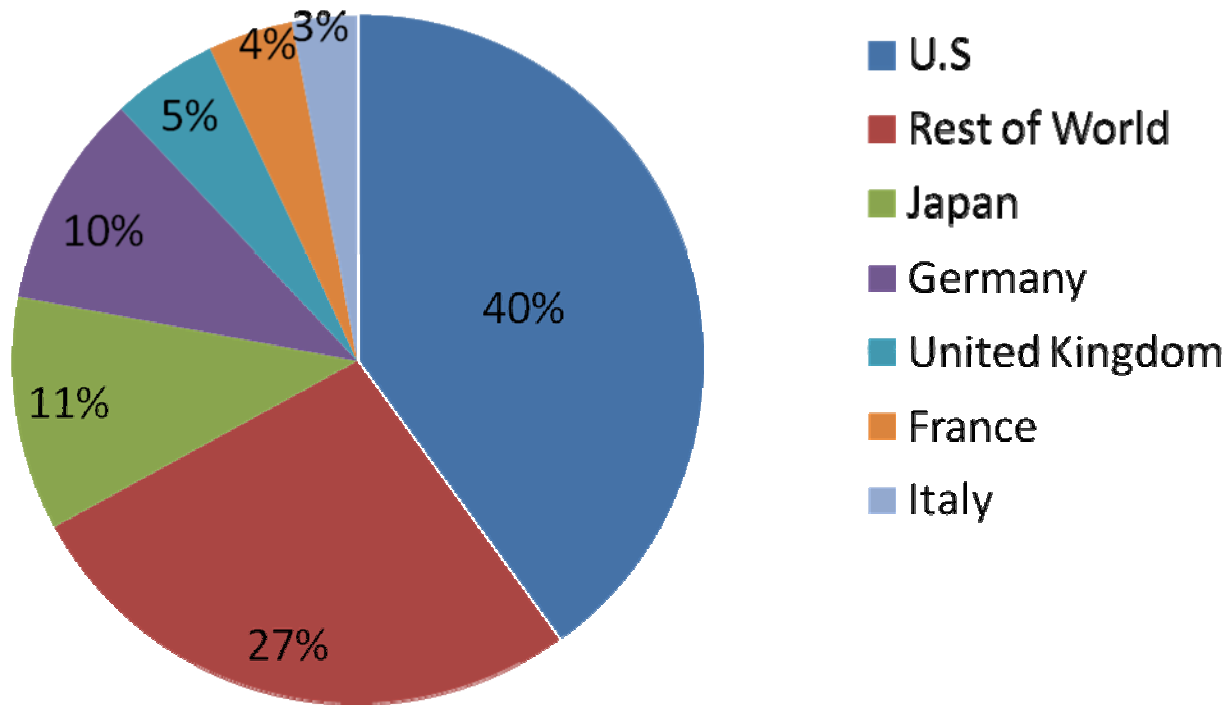
- Nextgen z folded hemostatic Chitosan impregnated gauze dressing
(quick control of hemorrhaging and save life)
- Containing Oxidised Cellulose derived from non- genetically modified cotton linters (botanically derived)
- Gell dressings
- Freeze – drying technology (Lyophilization) dressings
- Antibiotic & other – direct drug delivery
- Moist wound dressing (Wound tissues physiologically moist, but not wet, not dry)
- Polydioxanone is used to have invisible wound closure

Smart wound care management product.....

Benefits :

- Improve outcome of surgery
- Bind and inactivate bacteria and fungus
- Direct drug delivery to parts
- Stops bleeding fast
- Keep dry & prevent frequent dressing changes
- Minimise damage to wound & maximise quick healing

Worldwide Wound Management Market by country (estimated 2008)



Sutures :

- Types
 - a) Absorbable (synthetic, Natural – Catgut)
 - b) Non – absorbable (Nylon, Polyester, Silk, PP)
- Current Market size:
 - Rs 30 crores (approx) – TN based hospitals
 - Rs 300 crores (approx) – All India

Heart Valves:

- 3.4 million patients in Europe suffering from Aortic stenosis
- Next generation Tissue valves developed (to replace damaged / mal-function of Aortic heart valve)
- Two types of Valve Replacements
 - a) Mitral & Aortic
 - b) Both Mechanical & Tissue valves used
- Indian Market Size
 - a) In 2008 – Rs. 80 Crores
 - b) In 2010-11 – Rs 150 Crores

Baby Diaper Market:

- Global Market estimated is \$ 26.6 billion by 2012
- 7.5 billion (2010) – in Europe (estimated)
- 60% sales come from Europe, Japan, North America.
- Volume growth correlated to Birth rate.
- Market of the Diaper is still infancy in India & China
- Currently 1 out of 5 babies use diaper (4 babies' need is opportunity to tap)

Baby Diaper Market.....

- In 2025, world will have 328 million babies
- Barrier (not using):- cost, attitude, habit, education
- Benefits:- Convenience, Hygiene, comfort / easiness
- Every new born should be given 2 dozen of diapers free by respective hospitals / nursing homes (Area to tap)

Incontinence Market:

- High demand in western countries, but unheard in India
- Market potential is INR 750 million in India
(Growth rate in 40% in india)
- Global Market is estimated at USD 7 billion
- Totally imported now.
- Population above 65yrs age will be 58 million in 2010-11
(Life expectancy currently estimated 69.89 years & shall be 72.23 years by 2025)
- 1 out of 10 people get affected by urinary (or) faecal incontinence
- Current demographics trends suggest incontinence will rise.

Non woven:

- An unique engineered fabric and a product of our time, created by a modern & innovative industry
- 1 million ton estimated by 2018
- Global demand for non woven fabrics' forecast to rise 6.9% annually through 2012.
- World nonwoven industry is estimated \$21.2 billion

Non woven....

- Cost effective
- PP Spun bond, Melt blown, SMS, Spunlace
- Current Market (TN) –Rs. 8 Crores per annum (Gowns & Drapes)
- Scope for Gowns & Drapes available to tap – Rs 30 Crores per annum (in TN)
- Non Wovens are Breatheable, Drapeable, impermeable, Fluid Repellent, Sterilizable, Sewable, Lint- Free, Protective, Soft, Comfortable.

Compression Garments

- Global Market estimated USD 30 million
- Used to treat burns, sprains, muscle strains, low BP, post pregnancy period.
- Also used in long flights to avoid deep vein thrombosis.
- Help to break down lactic acid & provide additional support to body by contouring to the body part.

Artificial Kidney:

- 40 Lakhs dialysis procedures per annum done in India
- 900 Dialysis Centres
- Current Market size : Rs 40 Crores / annum

Mesh (Hernia Repairs):

- Current – Market Size Rs 25 to 30 Crores / annum(India)
- Market likely to increase 40 %, as suture procedures less
- Meshes Used :
 - Heavy weight
 - Partially absorbable
 - Inguinal repairs (lap)
 - Ventral Hernia (lap – Tissue separating Mesh)

Conclusion:

- Thus Textiles find many different uses in the field of medicine
- Medical Textile play a vital role in the hospitals throughput process.
- Medical Textiles are one of the dynamically expanding sectors and development of same is to convert pain full days of patients in to comfortable days.
- The future of Medical Textiles is not merely assured, but it is burgeoning

“If your actions inspire others to dream more, learn more, do more and become more, you are a leader.”

John Quincy Adams

THANKS TO ALL.....