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 excellance, 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 23.8 million 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)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Item Description</th>
<th>Domestic Consumption (estimated) Rs. In Crores</th>
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<tbody>
<tr>
<td>1</td>
<td>Surgical Disposables</td>
<td>42</td>
</tr>
<tr>
<td>2</td>
<td>Surgical Dressings</td>
<td>1000</td>
</tr>
<tr>
<td>3</td>
<td>Sutures</td>
<td>415</td>
</tr>
<tr>
<td>4</td>
<td>Artificial implants</td>
<td>249</td>
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<tr>
<td>5</td>
<td>Baby Diapers</td>
<td>193</td>
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<tr>
<td>6</td>
<td>Incontinence Diapers</td>
<td>46</td>
</tr>
<tr>
<td>7</td>
<td>Sanitary Napkins</td>
<td>1300</td>
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<td></td>
<td><strong>Total Value</strong></td>
<td><strong>3245</strong></td>
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</table>
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
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) Absorable ( 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 in 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 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 Breathable, 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.....