

Medical Textiles & Apparel

A Dynamic Niche with Long-term U.S.
Export Potential?”

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Today's Discussion

- * Significance of this niche and factors boosting global demand
- * Principal products and applications
- * Manufacturing processes and factors
- * Recent innovations
- * Trade trends-key products and markets, 2007-11
- * Case studies of U.S. exporters
- * Export strategies for long-term success



Significance of this sector

- * Supports healthcare
- * Growing niche- accounts for 20 percent of technical textiles
- * Domestic production
- * Recession resistant
- * U.S. competitive advantages



Growing Global Demand for Medical Textiles & Apparel

- * **Population growth and aging populations**
- * **Rising living standards**
- * **Construction of new medical facilities**
- * **Medical tourism**
- * **High hospital infection rates**
- * **Medical devices requiring textiles components**



Research Challenges

- * Limited and unreliable export data
- * Confidentiality - privately held firms
- * Intellectual property concerns



Nonwovens Comprise 75% of Medical Textiles



Low to High Tech Products

- * Wipes, wadding, gauze, wound dressings
- * Surgical drapes & towels
- * Hospital surgical scrubs, masks, and lab coats
- * Antimicrobial yarns & medical fabrics
- * Stump socks, prosthetic socks, diabetic socks
- * Compression hosiery (for varicose veins, etc.)



Low to High Tech Products-cont'd

- * Smart apparel –embedded devices/sensors to monitor heartbeat and other vital signs
- * Implantable textiles -sterile surgical catgut for sutures; vascular grafts, artificial veins
- * Textiles with elastomeric yarn used in maternity belts, neck wraps, surgical bras worn outside the body
- * Textiles used in heart valves, kidneys, artificial joints/bones/ligaments/implants (some are X rated!)

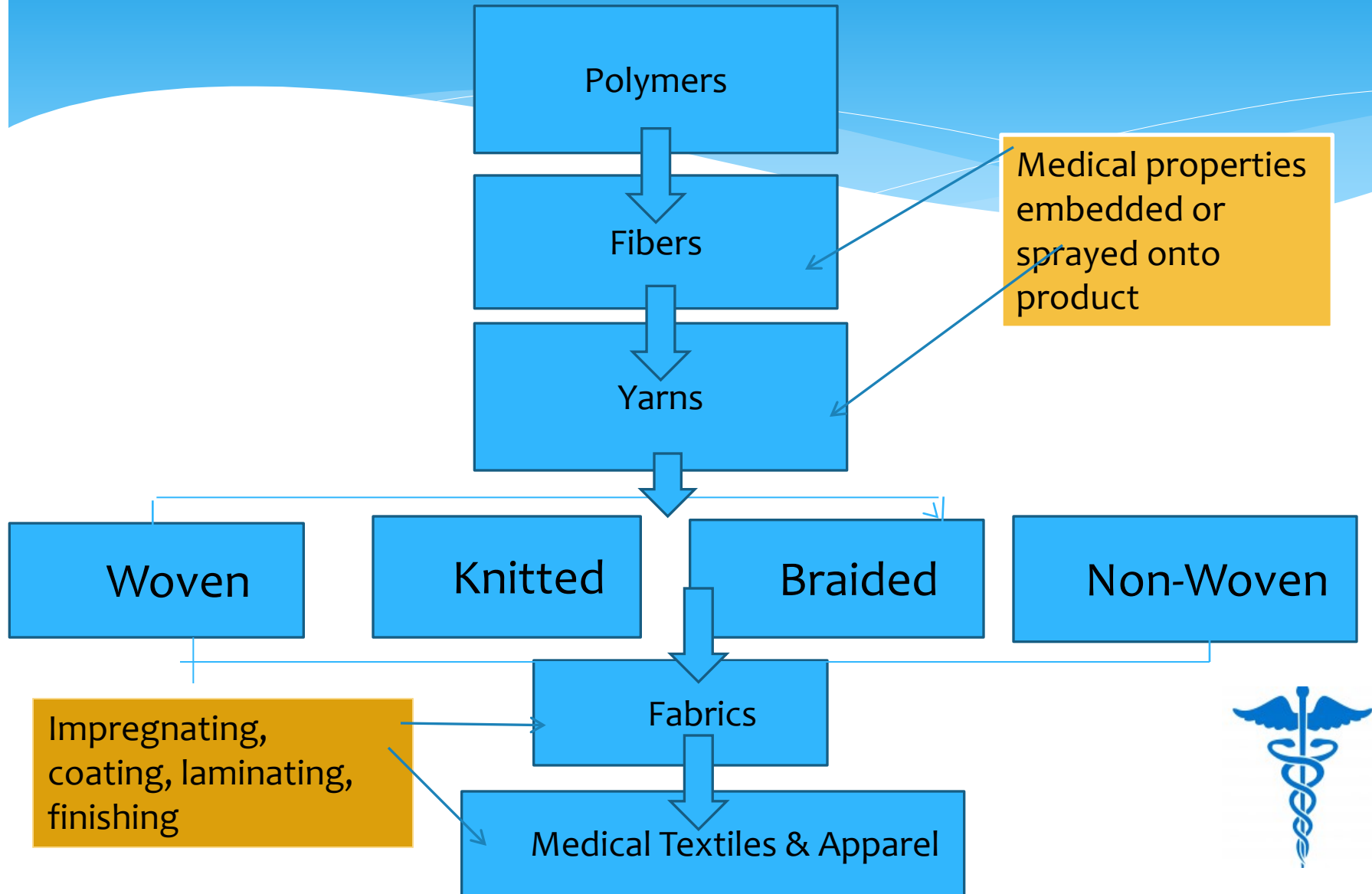


Cost Factors

- * Research and development
- * Raw materials
- * Fabrics
- * Equipment
- * Chemicals and their application
- * Testing
- * Waste disposal



Production Process



Essential Properties

- * Lightness –Strength –Elasticity –Softness
- * Fluid resistant –or absorbent
- * Biodegradable –Biocompatible – Bioreceptive
- * High barrier of protection & permeability
- * Anti-microbial and anti-bacterial
- * Electrical or thermal conductivity
- * Non-allergenic, non-toxic, non- carcinogenic, non-irritant; durable (medical apparel)
- * Comfortable and drapable



Innovations

- * New uses for old, natural fibers like silk
- * New fiber technology – ex: “Qmilch” - new sustainable textile fiber that when made into fabric – soothing to people with skin allergies (German)
- * Self-cleaning cotton fabric kills bacteria and breaks down toxic chemicals when exposed to light– developed by UC Davis
- * Antimicrobial technology added to apparel physically ruptures cells without poison
- * Pillowcases that eliminate wrinkles!



Medical Textiles & Apparel Exports

- * 3005.90 – wadding, gauze, bandages
- * 3006.10 – sterile surgical catgut
- * 6115.10 – compression hosiery
- * 6307.90 – surgical drapes and towels
- * 9021.90 – appliances worn or carried on the body



Export Challenges

- * Intellectual property protection concerns – pending patent issues
- * High foreign tariffs
- * Non-tariff barriers
- * Lower-cost competition



Export Challenges cont'd

- * Initial capital investment
- * Economies of scale
- * Delays/Licensing-patent requirements
- * Exchange rates – strong dollar
- * Mindset of U.S. manufacturers
- * FTAs

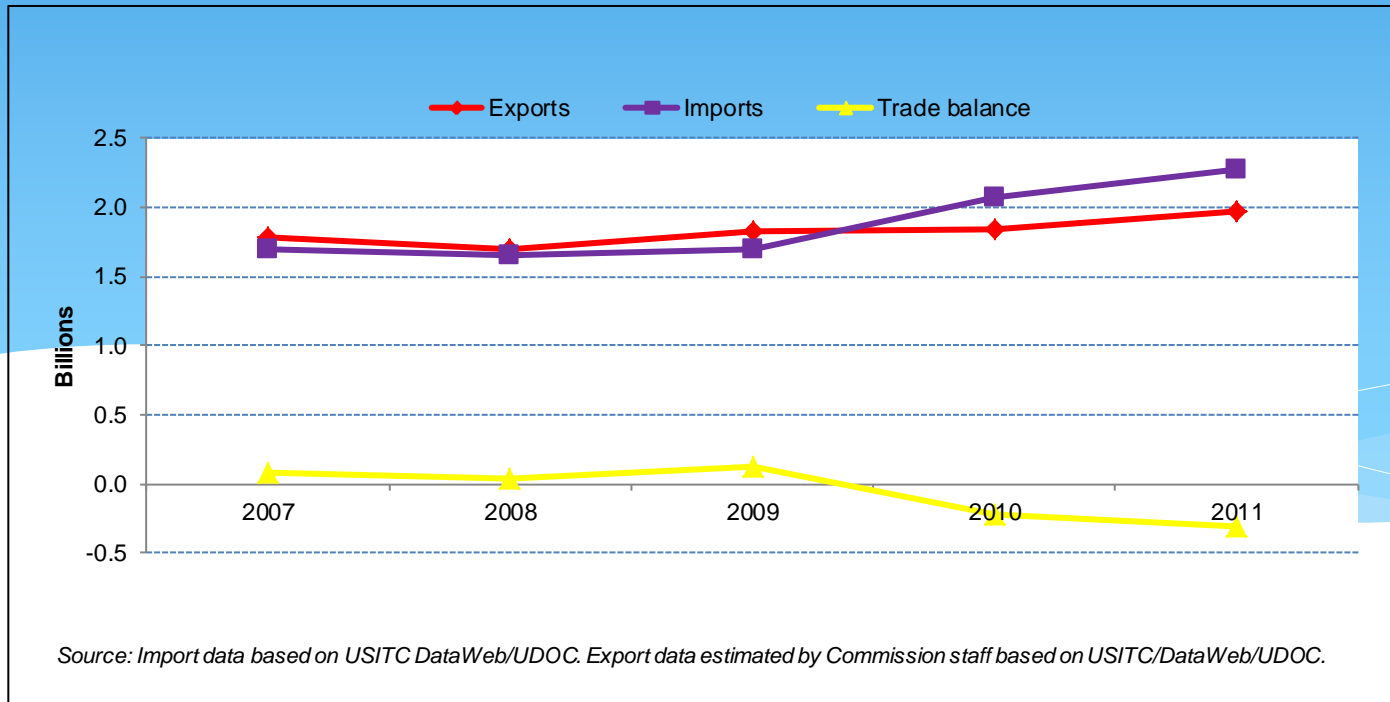


Export Opportunities

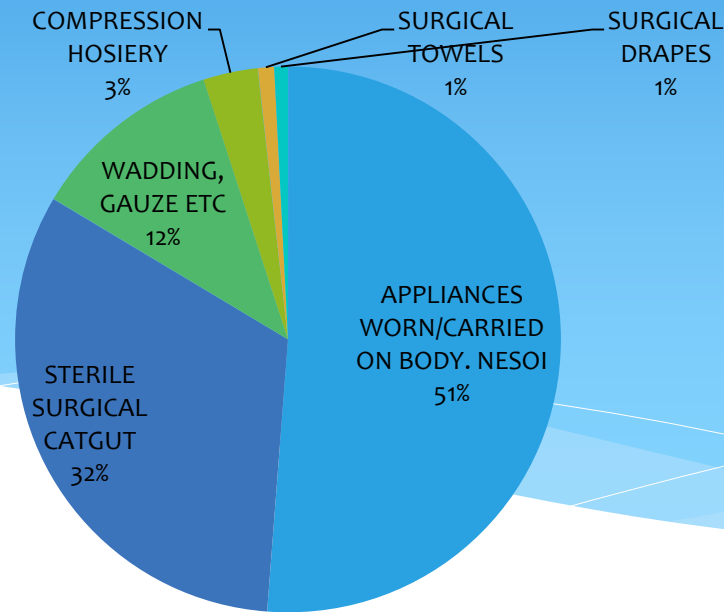
- * FTAs
- * Growing middle class in foreign markets
- * DOC assistance
- * EXIM bank export credit terms
- * Case Studies



U.S. Imports, Exports, and Trade Balance of Medical Textiles & Apparel 2007-2011

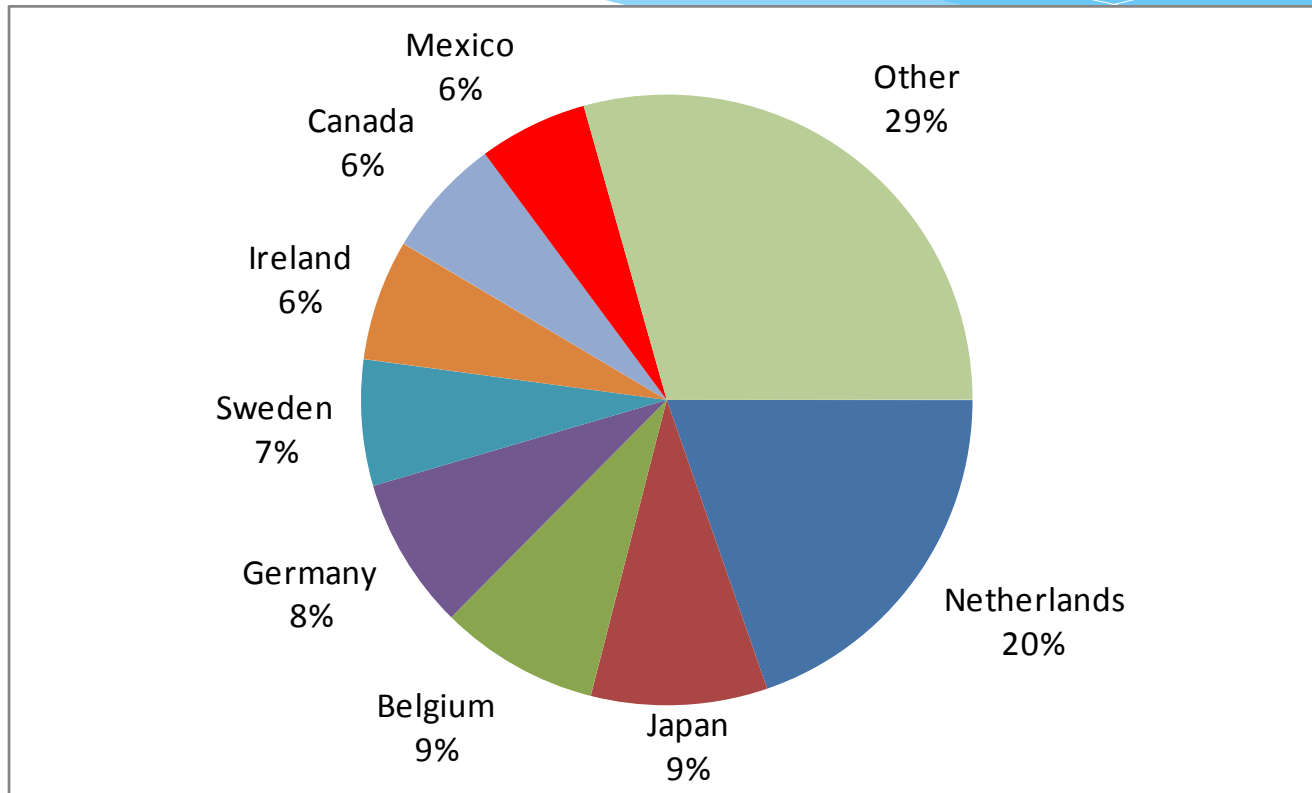


U.S. Exports, of Medical Textiles By Commodity Group - 2011



Source: Source: USITC DataWeb/USDOC.

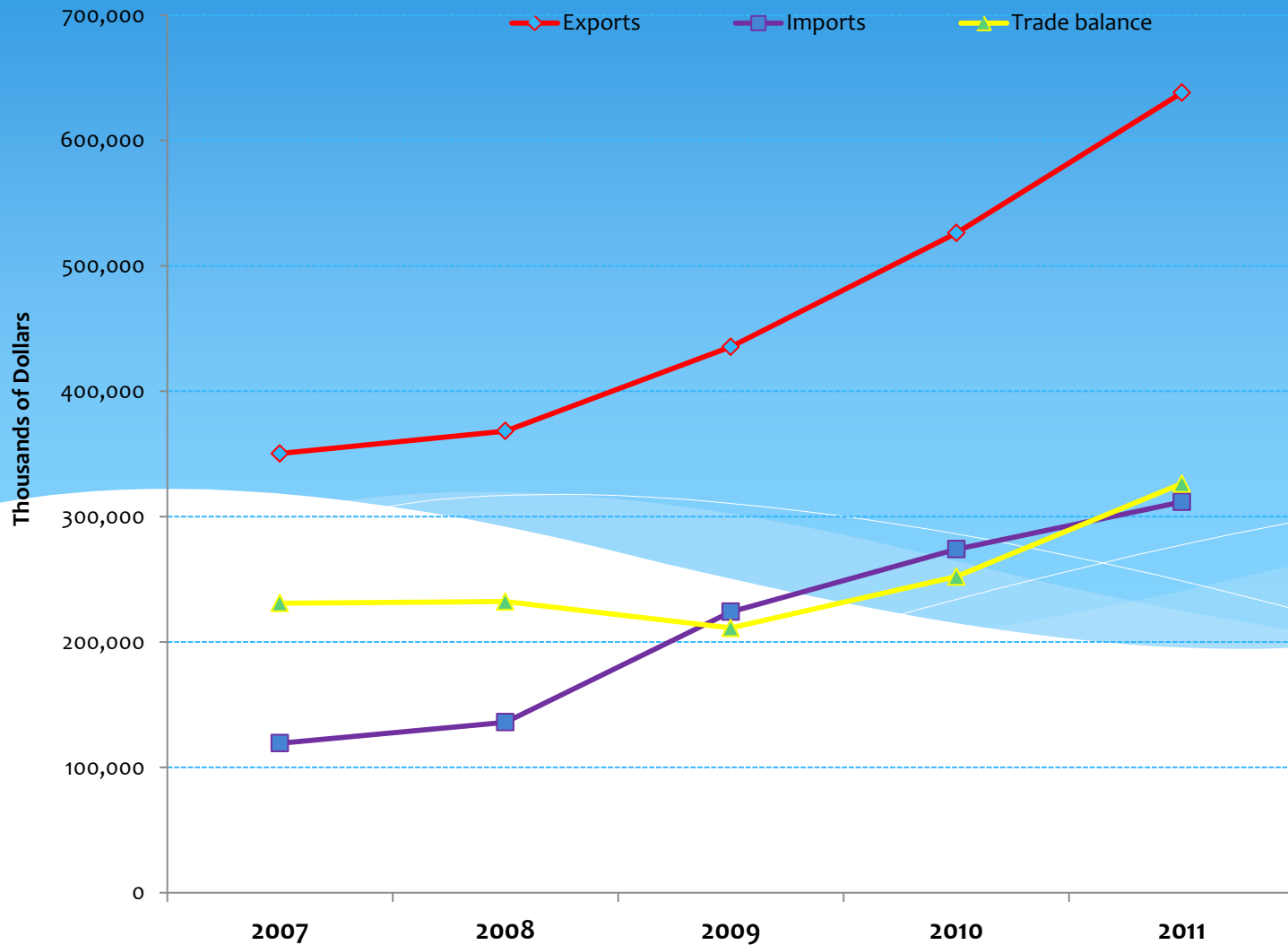
Top U.S. Export Markets for Medical Textiles - 2011



Source: USITC DataWeb/USDOC.



U.S. Imports, Exports, and Trade Balance of Sterile Surgical Catgut for 2007-2011



Essential for Long-Term Export Success

- * Take advantage of existing export help
- * Engage in ongoing investment in R & D
- * Emphasize branding
- * Diversify export markets and target markets with expanding medical infrastructure
- * Continually develop innovative products

