

Drug Delivery for Self-Administration

Technologies, Combination Products, and
Pipeline Prospects

December 2007



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The recent escalation in new biological drugs, including antibodies and recombinant proteins, is placing renewed emphasis on drug injection.

A number of factors are converging to create both risk and opportunity for parenteral drug makers and their device partners.

These factors are giving rise to a new generation of sophisticated, application-specific injection devices designed to satisfy caregiver and patient preferences while addressing managed care initiatives and the limitations of new classes of therapeutic drugs.

Because of their ability to safely and reliably satisfy treatment protocols and compliance goals, these devices will have a significant impact on the future of patient self-administration.

Greystone Associates is pleased to announce the publication of a new market study. **Drug Delivery for Self-Administration** is a comprehensive evaluation and analysis of the technology, products and participants providing the driving force behind this growing segment of the parenteral drug delivery sector.

Published in December (2007), the report has been designed and developed to provide pharmaceutical company decision makers, drug developers and formulators, drug device designers, and industry strategists with a detailed understanding of the expanding role and influence of user friendly pen injectors on medical industry strategies and healthcare treatment protocols. Provider organization business managers, healthcare administrators and investors will also benefit from this publication.

Advancing Technology and Tailored Delivery Devices

While alternative methods for delivering therapeutics to patients have had some notable successes, most drugs continue to be delivered either orally or by injection. Because they cannot tolerate the first-pass metabolism of the digestive tract, the recent escalation in new biological drugs, including antibodies and recombinant proteins, is placing renewed emphasis on drug injection. Now a number of factors are converging to create both risk and opportunity for parenteral drug makers and their device partners. These include new classes of drugs for previously refractory conditions, the growing trend toward self-administration for chronic diseases, shifting patient demographics in industrial countries, caregiver safety legislation, and continued pressure to control healthcare costs.

These factors are giving rise to a new generation of sophisticated, application-specific injection devices designed to satisfy caregiver and patient preferences while addressing managed care initiatives and the limitations of new classes of therapeutic drugs. User-friendly designs and the availability of an increasing number of drugs in pre-filled disposable cartridges and syringes are propelling the growth of injector pens at the expense of other drug delivery methods such as traditional syringes. Because of their ability to safely and reliably satisfy treatment protocols and compliance goals, these new devices will have a significant impact on the future of drug self-administration.

Executive Summary

Drug Delivery Market Dynamics

Technology and Patient-Friendly Therapeutics
The Impact of Injectable Self-Administration
Market Sector Dynamics
Competitive Landscape

Injectable Drug Delivery

Injectable Drug Delivery Sector Overview

Caregiver Preferences and Expectations
Growth Factors
 The Growth of Self-Administration for Chronic Conditions
 Managed Care Trends
 End-User Preferences and Expectations
Recombinant Proteins and Antibody Drugs

Injectable Drug Delivery Segment Analysis

Traditional Syringes
 Supply Chain Overview
 Technology Leaders
 Key Buyer/End User Factors
 Historical Market Data
 Traditional Syringe Company Profiles
Safety Syringes
 Factors Driving Safety Syringe Growth
 Safety Syringe Device Design Analysis
 Auto disable
 Manual Disable
 Auto and Manual Retractable
 The Leaders – Safety Syringe Company Profiles
Needle-free Injectors
 Disposable vs. Reusable
 Prefilled vs vials
 The Leaders – Needle-free Company Profiles
Pen Injectors
 Reusable Pens
 Disposable Pens
 Multifunction Autoinjectors
 The Leaders – Pen Injector Company Profiles

Injectable Drug Delivery Market Factors

Regulatory Factors
Technology Factors
Formulation Factors
Geographic Factors

Assessment of Important Self-Administration Therapeutics Segments

Arthritis
Cancer
Diabetes
Hepatitis
Human Growth Hormone

Multiple Sclerosis
Vaccines

Inhaled Drug Delivery

Inhaled Drug Delivery Sector Overview

The Upper Respiratory Market
The Systemic/Deep Lung Market
Established Therapeutic Targets
Emerging Therapies
Competing Technologies

Inhalation Technology

Product Design Factors
Inhaler Designs

- Dry Powder Inhalers
 - Powder Technology
 - Packaging Issues
 - DPI Device Company Profiles
- Metered Dose Inhalers
 - Basic Designs
 - Breathe Actuated Designs
 - MDI Device Company Profiles
- Nebulizers
 - Nebulizer Device Company Profiles

Performance Factors

- Bioavailability
- Dose Reproducibility
- Active Compound Stability

Commercial Devices
Development-Stage Devices

Inhaled Drug Delivery Therapeutic Segment Analysis

Allergic Rhinitis
Asthma
Cancer
Chronic Obstructive Pulmonary Disease
Cystic Fibrosis
Diabetes
Hemophilia
Hereditary Diseases
Hormone Therapy/Replacement
Immune System Modulators
Multiple Sclerosis
Neurology
Osteoporosis
Pain Management
Sexual Health

Inhaled Drug Delivery Market Factors

FDA Regulations
Device Packaging
Design Partnerships

Transdermal Drug Delivery

Prescription Patch Market Dynamics

Traditional Patch Markets
Recent and Emerging Markets
Transdermal Patch Market Drivers

Prescription Patch Design & Technology

Passive Patch Architecture
Passive Transdermal Patch Design
Passive Patch Construction
Active Transport Patch Technologies
Electrical Current
 Iontophoresis
 Electroporation
Microporation
 Laser Ablation
 Mechanical Arrays
 Radio Frequency
Thermal/Heat
Ultrasound

Prescription Patch Development Factors

The Design Cycle
Skin Patch Economics
Patch Manufacturing Dynamics
Patch Manufacturing Company Profiles
Patch Product Company Profiles

FDA-Approved Patch Therapies – Analysis and Market Data

ADHD
Contraception
Cardiovascular/Angina
Depression
Hormone Replacement Therapy
Hypertension
Local Anesthetics
Motion Sickness
Osteoporosis
Pain Management

Emerging Patch Therapeutics – Opportunity and Risk Assessment

Alzheimer's
Asthma
Diabetes
Parkinson's Disease
Sexual Dysfunction
Vaccines

Transdermal Patch Market Factors

Market Data

The study presents qualitative and quantitative data and information on key market measures and benchmarks:

- Market Segment Data
- Company Profiles
- Product Status & Prospects
- Industry Structure
- Emerging Markets
- Technology Factors
- Economic Factors
- Injector Design Criteria
- Market Projections
- Strategic Alliances
- Market Penetration Factors
- Regulatory Factors

Methodology

Research methodology is based on primary research in the form of in-depth interviews with key market participants, technology developers, distributors, industry experts, and market influencers, a list that includes regulatory officials, industry trade groups, and materials standards organizations.

Primary data is evaluated and normalized against secondary sources including trade journal articles, technical literature, industry publications, company data sheets and published information, and statistical data from government agencies and trade associations.

Forecasts and projections of market demand and future market activity are derived using standard modeling and statistical techniques

Feature Summary

- Analyzes commercial pen injection devices and FDA-approved pen injector products
- Analyzes product designs, technologies and market development issues
- Provides detailed descriptions of pen device market drivers, design approaches, and business strategies
- Forecasts device usage to 2010
- Profiles pen injector product market participants, their product development activities, business strategies, and corporate alliances and affiliations
- Evaluates the impact of economic, technology, and regulatory factors on parenteral drug delivery markets

Report Format and Availability

This report is available in hard copy or electronic format. A site license for a single physical location and a global license are also available. Publication is scheduled for December 2007, with availability on or before December 15th.

About Greystone Associates

Greystone Associates is a medical technology consulting firm focused on the areas of medical market strategy, product commercialization, venture development, and market research. We assist medical and healthcare market participants in achieving their business objectives through the creation of detailed development strategies, product commercialization programs, and comprehensive market and technology research and analysis.

Our market research publications are designed, researched and written to provide timely and insightful information and data on focused market segments, with the aim of providing market participants with the essential knowledge to refine and execute their marketing plans and financial targets.

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Drug Delivery for Self-Administration

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