Drug Delivery Products

US Industry Study with Forecasts for 2019 & 2024

Study #3354 | December 2015 | $5300 | 373 pages

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Gains will be driven by dosages that better treat autoimmune, cancer, cardiovascular, neurological, viral, and other debilitating disorders, and by devices that are safer, prevent infection and are easier to use.

US demand to rise 6.1% annually through 2019

Demand for drug delivery products in the US is projected to increase 6.1 percent annually to $251 billion in 2019. Specialized dosage formulations that improve therapies for autoimmune, cancer, cardiovascular, neurological, viral, and other debilitating disorders will lead gains. Included in this group are human and humanized monoclonal antibodies, polymer-encapsulated medicines, and brachytherapy seeds. Among drug delivery devices, pen injectors and retractable prefillable syringes will record the fastest growth based on safety, infection prevention, and ease-of-use advantages.

Parenteral drug delivery products to grow fastest

Demand for oral drug delivery products is forecast to rise at a rate slower than the industry average through 2019. Because of bioavailability and reduced dosing advantages, controlled-release formulations will continue to dominate revenues. On the downside, patent expirations and generic competition will soften overall growth prospects for this product segment.

Parenteral drug delivery products are projected to rise at the fastest rate of growth through 2019. Advances in monoclonal antibodies and polymer-encapsulated medicines will underlie growth. The use of new and existing therapies based on human and humanized monoclonal antibodies will improve the effectiveness of therapies against various forms of cancer as well as against other debilitating disorders, such as allergy-linked asthma, Crohn’s disease, rheumatoid and psoriatic arthritis, and wet age-related macular degeneration. Enhanced bioavailability and reduced toxicity advantages will boost applications for polymer-enhanced medicines in the treatment of such conditions as cancer complications, hepatitis B and C, and multiple sclerosis.

Prefillable syringes will account for the largest and fastest growth among parenteral devices over the long term. Improvements in safety features such as retracting needles, along with overall infection prevention and response time advantages, will underlie growth. Prefillable syringes will also broaden self-use applications based on advances in pen injectors.

Demand for other drug delivery products is expected to outpace oral drug delivery products through 2019. Dry powder and metered dose inhalers will account for more than three-fourths of revenues, reflecting upward trends in prevalence of asthma and chronic obstructive pulmonary disease (COPD). On the downside, growth prospects for inhalers will weaken gradually as patent expirations make several widely prescribed respiratory therapies available to low-cost generic competition.
ORAL DRUG DELIVERY PRODUCTS

Film-Coated Formulations

Film-coated formulations will account for the largest share of revenues amassed by controlled-release oral pharmaceuticals. Overall demand for these types of formulations is projected to reach $61 billion in 2019, up 4.2% annually from 2014. Adaptability to a wide range of oral release profiles, including delayed, extended, and sustained, will underlie gains. Applications served by film-coated formulations are antidepressants, antiviral agents, cholesterol-reducing agents, genito-urinary agents, pain control medications, and proton pump inhibitors.

Several types of film-coated tablets and capsules are employed for controlled-release drug delivery. The basic technique encloses the active drug ingredient in numerous enteric-coated microspheres which, in turn, are enclosed in a single capsule. Once inside the body, the capsule breaks apart or erodes, causing the microspheres to flow into the intestinal tract. The enteric coating on these small delivery agents dissolves upon contact with gastric acids and the active medication is released.

The release rate of drugs from encapsulated beads can be controlled by varying the thickness of the enteric coating or by adding polymers or waxes. In sustained-release medicines, different groups of microspheres are structured to deliver active ingredients at different times over an extended period. One group typically dissolves shortly after administration with another group dissolving several hours later.

Advantages of oral film-coated drug delivery products include long circulating action and reduced dosage requirements. Disadvantages involve the cost and complexity of manufacturing. Most time-release drug capsules require a high loading of excipients and the use of solvents in production. Film-coated drug delivery products have been available since the early 1950s when Smith Kline & French Laboratories

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**TABLE VII-6**

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<th>2004</th>
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<td>% cardiovascular agents</td>
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**CHART VIII-1**

**DRUG DELIVERY FORMULATIONS, US MARKET SHARE**

($177.7 billion, 2014)
Adare Pharmaceuticals Incorporated
Princeton Pike Corporate Center
1200 Lenox Drive, Suite 100
Lawrenceville, NJ 08648
609-450-1312
www.adarepharma.com

Annual Revenues: $150 million (estimated)
Employment: 600 (estimated)

Key Technologies/Products: customized drug release technologies, dosage form systems, bioavailability enhancement drug delivery platforms; and related pharmaceuticals and biopharmaceuticals

Adare Pharmaceuticals is involved in the development and licensing of proprietary drug formulation technologies, and the manufacture and commercialization of pharmaceutical and biopharmaceutical products based on those technologies. The Company was formed in April 2015 when TPG Capital LP (Fort Worth, Texas), a global private investment firm, bought the Aptalis Pharmaceutical Technologies business (Bridgewater, New Jersey) from Actavis plc (Ireland). Following the transaction, Aptalis Pharmaceutical Technologies changed its name to Adare Pharmaceuticals Incorporated.

Adare Pharmaceuticals is active in the US drug delivery systems industry through the development of three primary drug formulation technology platforms related to customized drug release technologies, dosage form systems, and bioavailability enhancement technology. Specific technologies include DIFFUCAPS, DIFFUTAB, EURAND MINITABS, ORBEXA, LIQUITARD, MICROCAPS, ADVATAB, and BIORISE. In general, these drug delivery technologies are intended to improve the safety and efficacy of pharmaceuticals and biopharmaceuticals, create more convenient, patient-friendly dosage forms and reduce

Sample Profile & Table, & Study Coverage

### COMPANY PROFILES

**Adare Pharmaceuticals Incorporated**
Princeton Pike Corporate Center
1200 Lenox Drive, Suite 100
Lawrenceville, NJ 08648
609-450-1312
www.adarepharma.com

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### TABLE V-4

**INFUSION PRODUCT DEMAND BY TYPE**
(million dollars)

<table>
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<th>Item</th>
<th>2004</th>
<th>2009</th>
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<td>Inpatient Days (million)</td>
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<td>$ infusion products/day</td>
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<td>Infusion Product Demand</td>
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<td>Premixed IV Solutions</td>
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<td>Infusion Pumps</td>
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<td>Other Infusion Products</td>
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<td>Parenteral Drug Delivery Products</td>
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**Source:** The Freedonia Group, Inc.

**Drug Delivery Products** is a Freedonia study that presents historical demand data (2004, 2009 and 2014) plus forecasts (2019 and 2024) by product type (oral, parenteral, others) and application. In addition, this study details key market environment factors, examines the industry structure, evaluates company market share and profiles 30 US industry competitors.
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Related Studies

Disposable Medical Supplies
This study analyzes the US disposable medical supplies industry. It presents historical demand data (2005, 2010 and 2015) and forecasts (2020 and 2025) by product (e.g., drug delivery products, disposable wound management products, nonwoven medical disposables), market (e.g., hospitals, consumer and home healthcare, outpatient, physicians’ offices, nursing homes, dental offices), and raw material (e.g., plastic resins, nonwoven fabrics, paper and paperboard, rubber). The study also evaluates company market share and profiles industry players. 
#3378............ February 2016.................$5500

Medical Adhesives & Sealants
This study analyzes the US medical adhesives and sealants industry. It presents historical demand data (2004, 2009 and 2014) and forecasts (2019 and 2024) by product (e.g., acrylic, cyanoacrylate, silicone, polyethylene glycol, fibrin, collagen, albumin), application (medical, dental) and market (primary care, dental offices, consumer). The study also considers market environment factors, details industry structure, evaluates company market share, and profiles industry competitors. 
#3355............ February 2016.................$5200

Dental Products & Materials
This study analyzes the US dental product and material industry. It presents historical demand data (2004, 2009 and 2014) and forecasts (2019 and 2024) by product (e.g., crowns and bridges, dentures, implants, fillings, orthodontic appliances, veneers, whitening products, adhesives and cements, sealants, fluoride treatments, toothpaste, mouthwash/dental rinse, floss) and raw material. The study also considers market environment factors, details industry structure, evaluates company market share, and profiles industry competitors.
#3359............ January 2016............... $5200

Medical Imaging Products
US demand for medical imaging products will rise 5.8 percent yearly to $31.9 billion in 2019. Computed tomography (CT) and magnetic resonance imaging (MRI) products will lead gains, followed by nuclear medicine products. Good prospects also exist for picture archiving and communications systems (PACS) as patient data networks are upgraded. This study analyzes the $24.1 billion US medical imaging industry, with forecasts for 2019 and 2024 by product and market. The study also evaluates company market share and profiles industry participants.
#3315......... September 2015..............$5300

World Medical Disposables
Global demand for medical disposables is forecast to rise 6.6 percent annually to $245 billion in 2018. The Asia/Pacific region will remain the largest and fastest growing market. Products used to treat widely prevalent chronic conditions such as kidney failure, urinary incontinence and arthritis-related pain will grow the fastest. This study analyzes the $178 billion world disposable medical disposables industry, with forecasts for 2018 and 2023 by product, world region, and for 16 countries. The study also evaluates company market share and profiles industry competitors.
#3205......... September 2014..............$6400

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