



[CLICK TO VIEW](#)

[Table of Contents 2](#)

[List of Tables & Charts 3](#)

[Study Overview 4](#)

[Sample Text, Table & Chart 5](#)

[Sample Profile, Table & Forecast 6](#)

[Order Form 7](#)

[About Freedonia, Custom Research, Related Studies, Corporate Use License 8](#)

Vaccines

US Industry Study with Forecasts for **2014 & 2019**

Study #2667 | August 2010 | \$4700 | 239 pages

www.freedoniagroup.com



The Freedonia Group

767 Beta Drive

Cleveland, OH • 44143-2326 • USA

Toll Free US Tel: 800.927.5900 or +1 440.684.9600

Fax: +1 440.646.0484

E-mail: info@freedoniagroup.com

Table of Contents

EXECUTIVE SUMMARY

MARKET ENVIRONMENT

General	4
Macroeconomic Outlook	5
Demographic Patterns.....	8
Health Care Trends	11
Health Insurance & Reimbursement...	12
Medical Conditions	14
Chronic Conditions	15
Acute Conditions.....	17
Reportable Diseases.....	19
National Health Expenditures	22
Medical Facilities & Professionals.....	24
Patient Activity	27
Animal Health Care	30
Animal Demographic Trends	31
Veterinarians & Other	
Veterinary Workers.....	32
Animal Health Expenditures	33
Regulatory Considerations	36
Human Vaccines Regulation	36
Animal Vaccines Regulation	38

VACCINE TECHNOLOGIES

General	39
Technologies Used in Currently	
Licensed Products	40
Technologies Under Development.....	44
Delivery.....	45
Valence & Combined Vaccines	46
Efficacy	47

PRODUCT OVERVIEW

General	49
Major Product Groups.....	50
Human Vaccines.....	51
Recommended Childhood	
Immunizations.....	54
Recommended Adult &	
Adolescent Immunizations.....	55
Animal Vaccines.....	57
Historical Market Trends.....	58

International Activity & Foreign Trade..	59
Human Vaccines Trade.....	62
Animal Vaccines Trade.....	63

HUMAN VACCINES

General	65
Pediatric Vaccines	67
Combination Vaccines	69
Diphtheria-Tetanus-Pertussis (DTaP)	70
Measles-Mumps-Rubella (MMR)	72
Other Combination Vaccines.....	75
Pneumococcal (PCV)	76
Varicella	78
Rotavirus	80
Hepatitis	82
Haemophilus b (Hib)	84
Pediatric Seasonal Influenza	86
Polio	88
Adult & Adolescent Vaccines	89
Seasonal Influenza Vaccines	91
Human Papillomavirus.....	95
Tetanus-Diphtheria-Pertussis (Tdap) ..	97
Meningococcus	99
Pneumococcus	101
Hepatitis	103
Herpes Zoster	104
Other Adult & Adolescent Vaccines..	106
Varicella	107
Tuberculosis	108
Lyme Disease.....	109
Pandemic Influenza Vaccines	110
Biodefense.....	113
Anthrax	115
Smallpox.....	117
Travel Vaccines	119
Developmental Vaccines	125
Cancer.....	127
Prostate Cancer.....	129
Lung Cancer	130
Other Cancers	131
Other Developmental Vaccines.....	132
HIV/AIDS.....	133
Respiratory Syncytial Virus (RSV) .	135
Alzheimer's Disease	137
All Other Developmental Vaccines	138

ANIMAL VACCINES

General	140
Livestock Vaccines	142
Bovine Vaccines.....	143
Porcine Vaccines	146
Ovine Vaccines	148
Companion Animal Vaccines.....	149
Canine Vaccines	151
Feline Vaccines	152
Equine Vaccines	153
Other Companion Animal Vaccines	155
Poultry Vaccines	155
Other Animal Vaccines	158

INDUSTRY STRUCTURE

General	160
Market Share	162
Competitive Strategies.....	164
Mergers & Acquisitions.....	166
Licensing & Related Agreements.....	168
Research & Development	173
Manufacturing	174
Marketing & Distribution	175

COMPANY PROFILES

AstraZeneca plc	178
Baxter International.....	180
Biogen Idec	182
Boehringer Ingelheim	183
CruceCell NV.....	185
Dow Chemical.....	190
DynPort Vaccine.....	192
Emergent BioSolutions.....	194
GenVec Incorporated	197
GlaxoSmithKline plc	199
Heska Corporation	202
Merck & Company.....	204
Novartis AG.....	210
Pfizer Incorporated.....	214
PharmAthene Incorporated	218
Sanofi-Aventis	221
VaxGen Incorporated	227
VaxInnate Corporation	229
Additional Companies	
Mentioned in the Study.....	231

List of Tables/Charts

EXECUTIVE SUMMARY

- 1 Summary Table.....3

MARKET ENVIRONMENT

- 1 Macroeconomic Indicators.....8
- 2 Population & Households..... 11
- 3 Health Insurance Coverage of the US Population 14
- 4 Chronic Conditions by Type ... 17
- 5 Acute Conditions by Type..... 19
- 6 Specified Reportable Diseases 21
- 7 National Health Expenditures 24
- 8 Selected Medical Facilities & Professionals 27
- 9 Patient Activity.....30
- 10 Animal Population32
- 11 Animal Health Employment ...33
- 12 Animal Health Expenditures ..35

VACCINE TECHNOLOGIES

- 1 US Licensed Vaccines by Production Technology 42

PRODUCT OVERVIEW

- 1 Vaccines Demand by Major Product Group 51
- 2 Human Vaccines Licensed for US Sale 52
- 3 2010 CDC-Recommended Childhood Immunizations ... 55
- 4 2010 CDC-Recommended Adolescent Immunizations .. 56
- 5 2010 CDC-Recommended Adult Immunizations..... 56
- 6 Vaccines Market, 1999-2009.. 59
- 7 US Trade in Vaccines 62
- 8 US Trade in Human Vaccines.. 63
- 9 US Trade in Animal Vaccines.. 64

HUMAN VACCINES

- 1 Human Vaccines Demand 67
- 2 Pediatric Vaccines Demand by Type 69
- 3 Pediatric Combination Vaccines Demand 70
- 4 Diphtheria, Tetanus & Pertussis (DTaP) Combination Vaccines Demand 72
- 5 Measles, Mumps & Rubella (MMR) Combination Vaccines Demand 75
- 6 Other Combination Vaccines Demand 76
- 7 Pediatric Pneumococcal Vaccines Demand 78
- 8 Varicella Vaccines Demand 80
- 9 Rotavirus Vaccines Demand ... 82
- 10 Pediatric Hepatitis A & B Vaccines Demand 84
- 11 Haemophilus b (Hib) Vaccines Demand 86
- 12 Pediatric Seasonal Influenza Vaccines Demand 88
- 13 Polio Vaccines Demand 89
- 14 Adult & Adolescent Vaccines Demand by Group & Condition 91
- 15 Adult & Adolescent Seasonal Influenza Vaccines Demand . 95
- 16 Human Papillomavirus (HPV) Vaccines Demand 97
- 17 Tetanus-Diphtheria-Pertussis (Tdap) Vaccines Demand 99
- 18 Meningococcal Vaccines Demand 101
- 19 Adult & Adolescent Pneumococcal Vaccines Demand 103

- 20 Adult & Adolescent Hepatitis A & B Vaccines Demand 104
- 21 Herpes Zoster Vaccines Demand 106
- 22 Other Adult & Adolescent Vaccines Demand 107
- 23 Pandemic Influenza Vaccines Demand 113
- 24 Biodefense Vaccines Demand 115
- 25 Travel Vaccines Demand 120
- 26 Developmental Vaccines Demand 127
- 27 Cancer Vaccines Demand 129
- 28 Other Developmental Vaccines Demand 133

ANIMAL VACCINES

- 1 Animal Vaccines Demand 141
- 2 Livestock Vaccines 143
- 3 Companion Animal Vaccines Demand 150
- 4 Poultry Vaccines Demand 158
- 5 Other Animal Vaccines Demand 159

INDUSTRY STRUCTURE

- 1 US Vaccines Revenues by Company, 2009 161
- Cht US Human Vaccines Market Share by Company, 2009... 162
- Cht US Animal Vaccines Market Share by Company, 2009... 163
- 2 Selected Acquisitions & Divestitures 167
- 3 Selected Cooperative Agreements 171

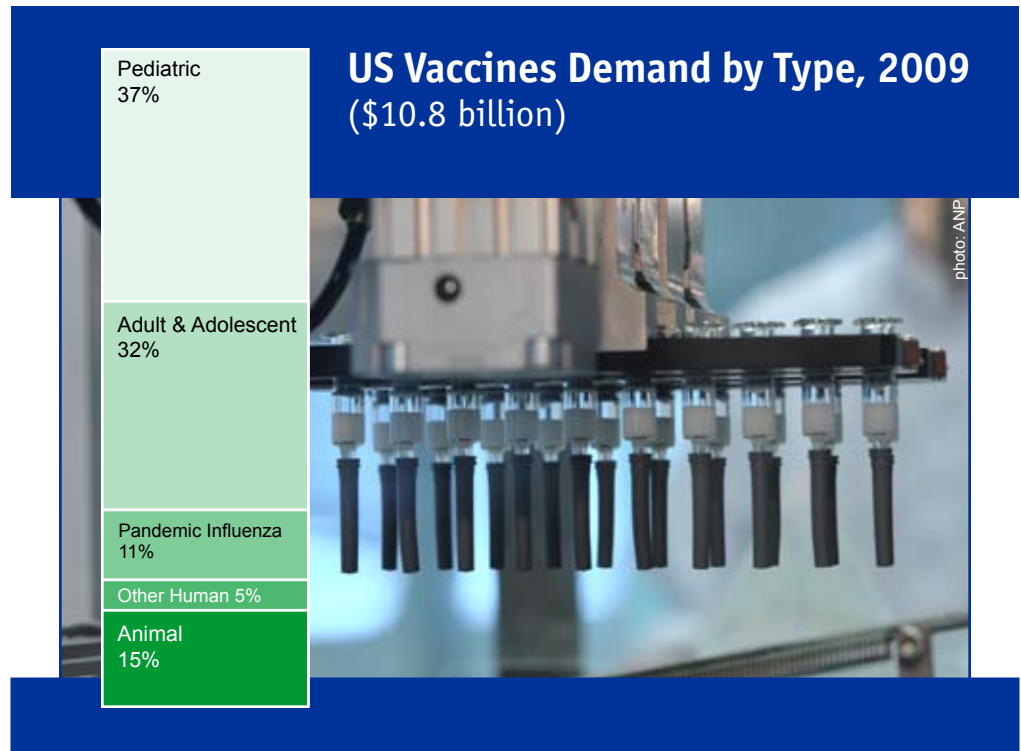
Ongoing growth trends include the introduction of significant new vaccines, the establishment and improvement of blockbuster vaccines, and new recommendations for adult and adolescent types.

US demand to grow 5.6% annually through 2014

The US vaccines market experienced meteoric growth between 2004 and 2009. This growth came as a result of the introduction of significant new products, such as Merck's GARDASIL, the establishment and improvement of blockbuster vaccines like Pfizer's PREVNAR, and substantial new public health recommendations for adult and adolescent vaccines to address a wide range of diseases. Also at play has been public response to the threat of a pandemic outbreak of H1N1 influenza, which spurred the revamping of production processes to meet sudden demand. New technologies and applications have rejuvenated research efforts to develop products, and an industry that was once highly concentrated is now seeing the entry of new players, from small, research-based firms to established companies. This high level of demand for vaccines in the US will be sustained in the coming years, growing 5.6 percent annually to \$14.2 billion in 2014. In the years that follow, ongoing introduction of new products to prevent or to treat complex human diseases, such as cancer, will continue to advance vaccines sales.

Adult, adolescent vaccines to outpace pediatric

Historically, pediatric vaccines dominated the market, but in 2006 adult and adolescent vaccines began to match pediatric demand. Public health recom-



mendations for adult boosters against common diseases, the introduction of new vaccines for pneumonia and shingles, and the importance of seasonal influenza immunization have led to significant growth in this segment, which is expected to exceed \$4.4 billion in 2014.

Pediatric vaccines demand will exceed \$4.9 billion in 2014 and will continue to grow, although not at the pace of demand for adult and adolescent vaccines. While patents are expiring for vaccines that have long been used against common childhood diseases, new patented combination vaccines are being introduced that reduce the number of injections and protect against wider arrays of diseases.

Demand for developmental vaccines is expected to reach \$2 billion in 2014. New applications are being used to treat people who have already acquired disease, as with PROVENGE (Dendreon), licensed in 2010 for advanced prostate cancer patients. Several new vaccines to treat or prevent cancer are expected to be licensed in a few years.

Demand for animal vaccines is forecast to expand 4.7 percent annually to 2014. An increasing focus on food safety, the widening availability of pet health insurance and new product introductions will promote growth. Continuing advances in biotechnology will broaden the range of disease targets adaptable to animal vaccines.

Copyright 2010 The Freedonia Group, Inc.

[Click here to purchase online](#)

Sample Text, Table & Chart

ANIMAL VACCINES

Canine Vaccines

Demand for canine vaccines is forecast to increase 4.6 percent per year to \$263 million in 2019. The increase is driven by the growing population, increased health awareness and the development of a variety of new vaccines. The market is expected to remain one of the most dynamic in the pet care industry with the canine population projected to reach 77 million by 2019. Common canine diseases include rabies, distemper, parvovirus, bordetella, adenovirus, leptospirosis, and influenza. Lyme disease. Other frequent problems include infestation with ticks, worms and other parasites as well as age-related conditions such as cancer, heart disease and vision problems. Trends prompting increased consumer spending on pet health care have spurred the development of new vaccines.

Pfizer produces DEFENSOR against rabies, BRONCHICINE CAe for bordetella, and FIRSTDOSE to prevent canine coronaviral gastroenteritis. Pfizer also offers a vaccine to prevent canine periodontitis. Fort Dodge Animal Health, owned by Pfizer, produces DURAMUNE, one of the best-selling vaccine products in the US. It protects against parvovirus, distemper, adenovirus and canine parainfluenza; it is available in combination with other canine vaccines. Fort Dodge's GIARDIAVAX prevents disease caused by Giardia, a waterborne protozoal parasite; while LYMEVAX protects dogs against Lyme disease caused by Borrelia burgdorferi. In 2009, Boehringer Ingelheim Vetmedica marketed many of these established brands (including DURAMUNE and RABVAC) under the terms of its acquisition of major products from Pfizer and Fort Dodge. Boehringer Ingelheim Vetmedica also markets SOLO-JEC as a vaccine against distemper, adenovirus, parvovirus and other diseases.

151

Copyright 2010

**SAMPLE
TEXT**

TABLE V-1

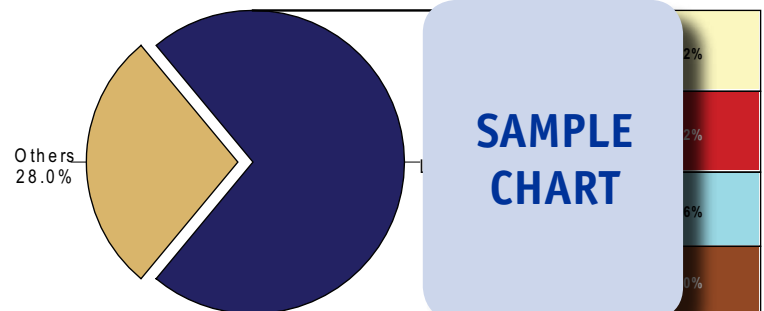
HUMAN VACCINES DEMAND
(million dollars)

Item	1999	2004	2009	2014	2019
Resident Population (million persons)	270.0	280.0	290.0	300.0	310.0
\$ vaccines/capita	17	17	17	17	17
Human Vaccines Demand	4,600	4,600	4,600	4,600	4,600
Pediatric Vaccines	1,000	1,000	1,000	1,000	1,000
Adult & Adolescent Vaccines	1,000	1,000	1,000	1,000	1,000
Pandemic Influenza Vaccines	1,000	1,000	1,000	1,000	1,000
Biodefense Vaccines	1,000	1,000	1,000	1,000	1,000
Travel Vaccines	1,000	1,000	1,000	1,000	1,000
Developmental Vaccines	1,000	1,000	1,000	1,000	1,000
% human vaccines	0.0	0.0	0.0	0.0	0.0
Total Vaccines Demand	2,000	2,000	2,000	2,000	2,000

**SAMPLE
TABLE**

CHART VII-2

US ANIMAL VACCINES MARKET SHARE BY COMPANY, 2009
(\$1.6 billion)

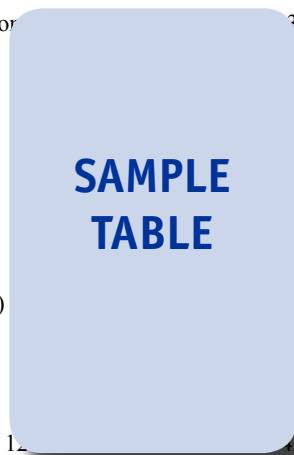


**SAMPLE
CHART**

Sample Profile, Table & Forecast

TABLE V-10
PEDIATRIC HEPATITIS A & B VACCINES DEMAND

Item	1999	2004	2009	2014	2019
Population under 5 Years (million persons)					3.0
\$ vaccine/capita					10.0
Hepatitis Vaccines Demand (mil \$)					30.0
Hepatitis A					20.0
Hepatitis B					10.0
\$/dose hepatitis A					24.0
\$/dose hepatitis B					18.0
Hepatitis Vaccines Demand (mil doses)					1.5
Hepatitis A					0.7
Hepatitis B					0.8
% hepatitis					0.5
Pediatric Vaccines Demand (mil \$)	12.0	12.0	12.0	12.0	12.0



COMPANY PROFILES

Heska Corporation
 3760 Rocky Mountain Avenue
 Loveland, CO 80538
 970-493-7272
<http://www.heska.com>

Revenues: \$700 million (2009)
 US Revenue: \$700 million (2009)
 Research and Development: \$100 million (2009)
 Employment: 1,000

Key Products: Feline vaccines, pharmaceuticals and products.

Heska Corporation markets and supports veterinary pharmaceuticals and animal health products. The Company conducts operations through two segments: Core Companion Animal Health; and Other Vaccines, Pharmaceuticals and Products.

Heska participates in the US vaccine industry through both the Core Companion Animal Health and the Other Vaccines, Pharmaceuticals and Products segments. Via the Core Companion Animal Health segment, which generated 2009 revenues of \$66 million, Heska produces and sells feline vaccines, in addition to pharmaceuticals, supplements, diagnostics and other products. The Company's feline vaccines, which are marketed under the ULTRANASAL brand name, are three-way modified live vaccine combinations engineered to prevent disease caused by three common feline respiratory viruses: calicivirus, rhinotracheitis virus and panleukopenia virus. Heska also makes a two-way ULTRANASAL feline vaccine designed to prevent disease caused by rhinotracheitis and calicivirus. Both types of vaccines are administered by dropping the liquid preparation into the nostrils of cats and kittens.

202 Copyright 2010 The Freedonia Group, Inc.



"Most demand will be for hepatitis B vaccines, which will increase marginally to \$195 million for 11.4 million doses. The single hepatitis B vaccine will experience competition from COMVAX, Merck's combination vaccine for hepatitis B and Haemophilus b, which reentered the market in August 2010 following a voluntary recall."

--Section V, pg. 82

