

# The Use of Medicines in the United States: Review of 2011

April 2012

# Introduction

Breakthrough therapies, innovations in disease treatments, and changes in the consumption of medicines transformed the US healthcare market in 2011.

Major innovations in disease treatment, including the most new medicines in a decade, combined to bring transformative therapy options to over 20 million Americans in 2011. At the same time, however, we saw a decrease in the use of medicines by patients and further declines in physician office visits, a continuing trend of the last few years. The availability of new generic drugs in a number of chronic therapies contributed to lower patient out-of-pocket spending, and a minimal real per capita increase in total spending on medicines.

This retrospective analysis, in which we examine key issues and trends impacting consumption of and spending on medicines, provides new perspective and important background to informing critical decisions currently under consideration by all who have a stake in the US healthcare system.

This report was developed as a public service by the IMS Institute for Healthcare Informatics, without industry or government sponsorship.

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New Therapies Launched 34

Patient Office Visits -4.7%

Medicine Use Nationally -1.1%

Medicine Use By 19-25 Yr Olds +2.0%

Medicine Use By 65+ Yr Olds -3.1%

Out-of-Pocket Spending \$49Bn

Average Medicare Part D Copay -\$2.66

Real Per Capita Drug Spending +0.5%

Total Drug Spending \$320Bn



# Executive summary

## TRANSFORMATIONS IN DISEASE TREATMENT

Major transformations in treatment options for diseases affecting a few thousand to several million patients became available during 2011. They were not only the most in number in a decade, but represented important clinical advances, rarely seen in combination in the last 10 years.

## CHANGES IN THE UTILIZATION OF HEALTHCARE AND MEDICINES

Overall per capita utilization of medicines declined in 2011 as patient office visits and non-emergency room hospital admissions dropped, and older Americans reduced their retail drug use. Not only were rates of usage for chronic medicines declining, there were important variations across the country and by patients' age, which suggests a concerning trend in the nation's use of healthcare services. Young people, aged 19-25, increased their use of prescription drugs as many were able, for the first time, to remain on their parents' health insurance, while seniors, aged 65 and over, reduced their volume of prescriptions.

## PATIENT PAYMENT FOR MEDICINES

Patients with insurance spent \$49Bn out-of-pocket for prescription drugs, down \$1.8Bn from 2010. The declines were largely related to the introduction of subsidies for Medicare Part D beneficiaries in the "donut-hole." Those with employer or group insurance, and in Medicaid, spent no more on prescription drugs in 2011 than they did in 2010, even though per prescription copays increased. The average copay for about 75% of all prescriptions covered by commercial insurance plans was \$10 or less, but as much as \$40 on average for branded drugs.

## SPENDING ON MEDICINES

Total healthcare system spending on medicines reached \$320Bn in 2011, increasing on a real per capita basis by 0.5%. Declining use of branded drugs and greater availability of lower-cost generic products offset price increases and higher spending on new innovative medicines. Branded products that lost exclusivity due to patent expiries contributed \$15Bn in reduced spending. Spending on new branded medicines, which declined in prior years,

has rebounded since 2009, and reflected the extensive number of transformative treatments that are now available. With generics currently representing 80% of dispensed prescriptions, spending in this segment grew by \$5.6Bn in 2011. Overall spending on medicines continued to be concentrated on traditional small molecule oral pills dispensed through retail pharmacies. Spending growth in these segments was outpaced by biologics, injectables, specialty and institutional channels – which accounted for as much as 30% of total spending.

## USAGE AND SPENDING IN MAJOR THERAPY AREAS

Nearly one-third of total spending was concentrated in five therapy areas, each of which grew faster than the overall market and exhibited a range of dynamics related to new treatment option usage, and growing diagnosis of the related disease. These included medicines for cancer, asthma and chronic obstructive pulmonary disease, dyslipidemia, diabetes, and mental health medicines for psychoses or bipolar disorders.

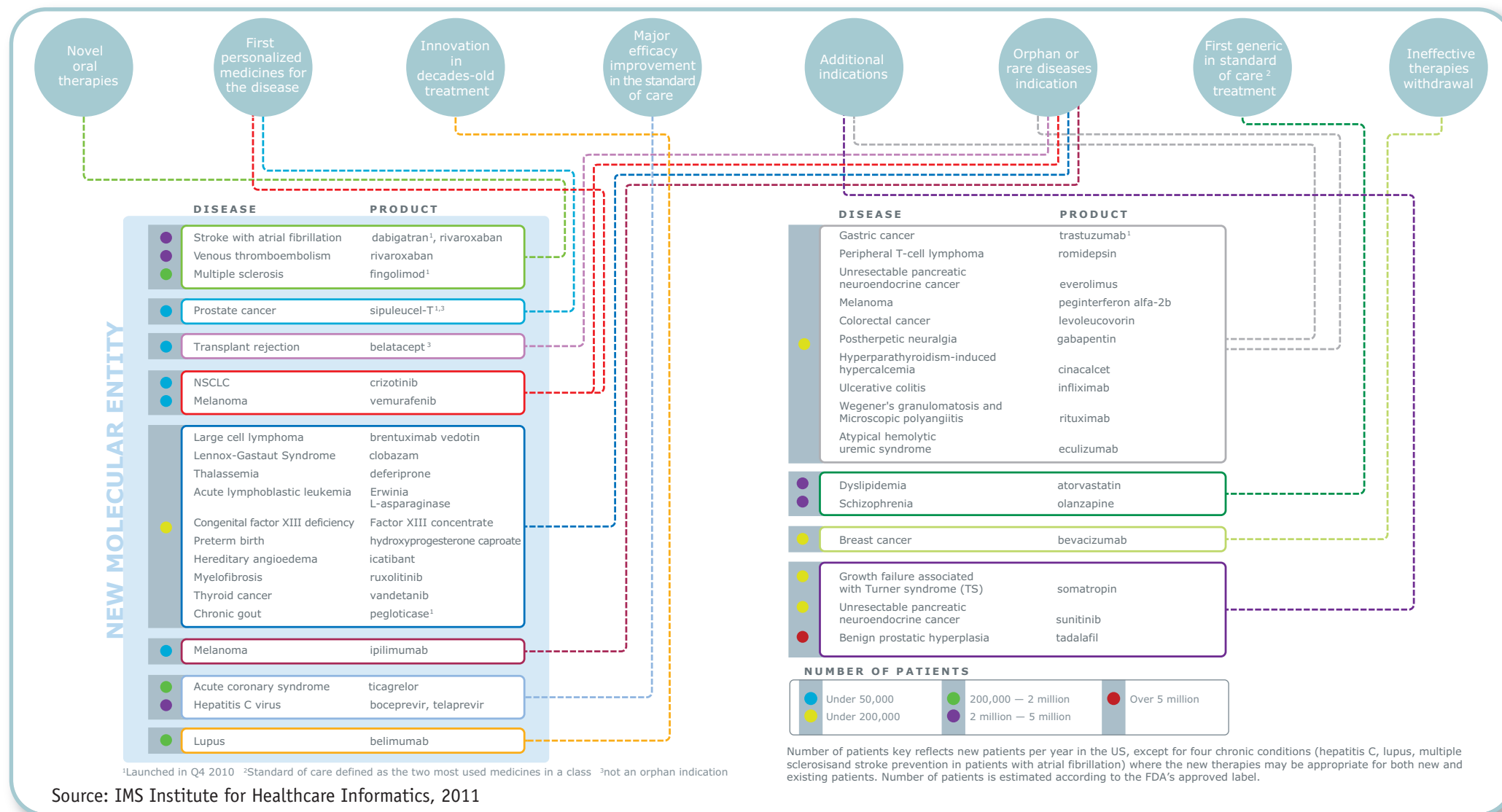
# Transformations in Disease Treatment



**Major transformations in the treatment of a large number of significant diseases, affecting over 20 million patients, occurred during 2011 mainly due to the introduction of the most new medicines in a decade.**

- A large number of disease treatments were transformed in 2011 mainly through the introduction of new medicines.
- In aggregate these new treatments may be appropriate for an estimated 2.5 million patients who are newly diagnosed with these conditions per year, as well as 20 million who suffer from these diseases.
- Breakthrough therapies became available for the first time to treat several types of cancer, multiple sclerosis, hepatitis C and cardiovascular conditions.
- A significant group of therapies for orphan diseases – which have fewer than 200,000 patient sufferers – also became available.
- The 34 new molecular entities launched in 2011 were the most in at least 10 years.

# Over 20 million patients may be affected by new disease treatments



# A wide range of breakthroughs became available for the first time

New medicines launched last year brought improved efficacy, safety and convenience for diseases affecting millions battling chronic conditions. Additionally, important breakthroughs for rare orphan diseases, that afflict less than 200,000 people, transformed disease treatment options through personalized medicines based on specific genetic markers for subtypes of cancer and individually cultured immunotherapies. Among the most notable developments were:

## **Hepatitis C: boceprevir and telaprevir.**

Protease inhibitors, when added on to standard of care, are the most advanced direct acting antivirals and are a “cure” for many patients. They have the potential to shorten therapy duration in early responders easing the burden of therapy. The previous standard year-long interferon regimen has intolerable side-effects which often result in patients failing to complete the regimen and never achieving a cure. The complications associated with unsuccessfully treated chronic hepatitis C include cirrhosis, liver cancer and liver failure, each among the most damaging and complicated diseases to treat.

## **Multiple sclerosis: fingolimod.**

The first approved oral disease modifying therapy for multiple sclerosis has been available since late 2010. It brings an improved efficacy and safety profile as well as convenient oral administration compared to regular injections of beta interferon or immuno-modulatory peptides.

## **Stroke prevention in patients with atrial fibrillation: dabigatran and rivaroxaban.**

The standard of care, warfarin, thins the blood to prevent strokes and moderate cardiac issues for patients with irregular heart rhythms. It requires routine blood monitoring checks and dose adjustments, to avoid excess bleeding and other risks. These new medicines improve stroke prevention efficacy while generating less bleeding, and avoiding the need for ongoing monitoring.

## **Melanoma: ipilimumab and vemurafenib.**

The availability of two new targeted therapies for melanoma represents a dramatic improvement in the treatment paradigm over interleukin-2 with its limited efficacy and complicated side effects. Ipilimumab, a monoclonal antibody, generates an immune response against the tumor and is approved for use in 85% of inoperable patients and improves survival by 4 months. Vemurafenib is targeted to the BRAFV600 mutation for inoperable or metastatic

melanomas, the most aggressive form of skin cancer. It interrupts the B-Raf protein process and results in melanoma cells programming their own death. It can be used in up to 60% of melanoma patients and may extend life by 6 months.

## **Prostate cancer: sipuleucel-T.**

The first personalized immunotherapy for late stage prostate cancer brings a new option to patients, many of whom have failed an existing radiotherapy, surgery, or chemotherapy regimen. Sipuleucel-T generates an immune response based on culturing the patient's tumor cells and has been shown to improve overall survival by 4 months.

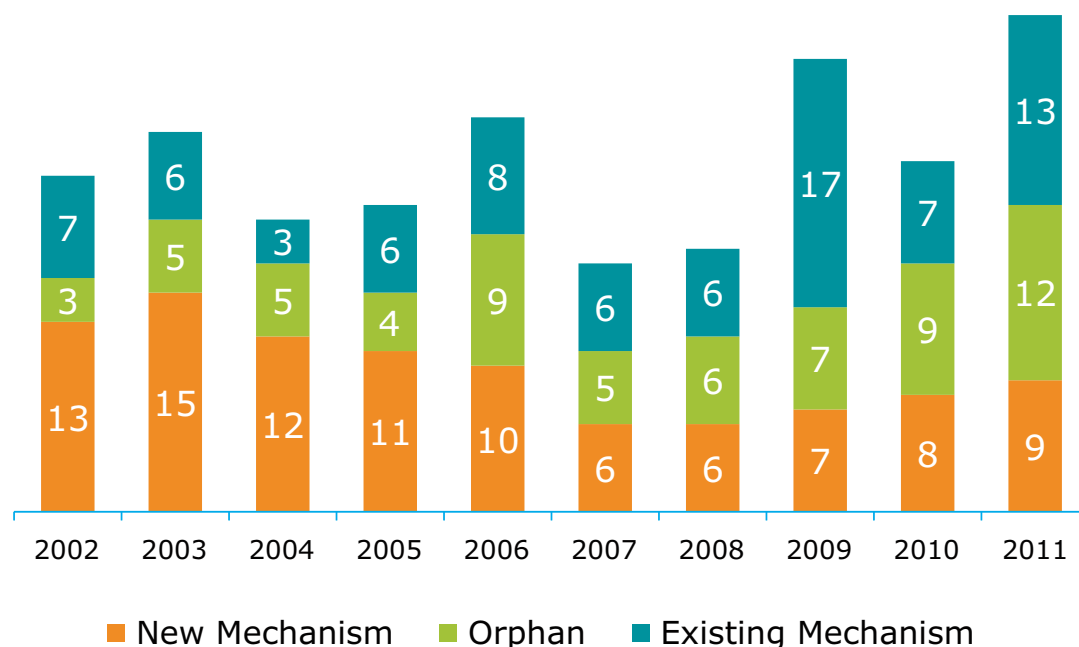
## **Non-Small Cell Lung Cancer (NSCLC): crizotinib.**

The first personalized therapy for NSCLC is appropriate for 3 to 7% of patients whose tumors carry a unique mutation (EML4-ALK translocation). There are some indications that the particular mutation is becoming more common and incidence could increase to 10-20% among NSCLC patients. Improved survival of 9.2 months was demonstrated in clinical trials. Late stage cancers are usually fatal within months and lung cancers have had few effective biopharmaceutical options.

Source: IMS Institute for Healthcare Informatics, 2011

# More new medicines were launched in 2011 than in the past decade

## New Molecular Entities Launched in the US 2002-2011



Source: IMS Institute for Healthcare Informatics, 2011

- 34 New Molecular Entities, including novel chemical and biologic entities, were launched in the US in 2011, the most in the last 10 years.
- Medicines with new mechanisms of action in their therapy areas, were launched in greater numbers versus prior years, many of which represented significant breakthroughs.
- Orphan drugs, those which treat rare diseases affecting less than 200,000 people, and for which few therapies are effective, also saw the most launches in the last 10 years.

### Chart notes

New Molecular Entity (NME): A novel molecular or biologic entity or combination where at least one element is novel.

NME launches in the US by year of launch, regardless of timing of FDA approval.

New mechanism: First product with a new mechanism of action for its FDA approved indication.

Existing mechanism: Subsequent products with an existing mechanism of action for an indication.

Orphan: Drugs with one or more orphan indications approved by FDA at launch.



# Changes in the Utilization of Healthcare and Medicines

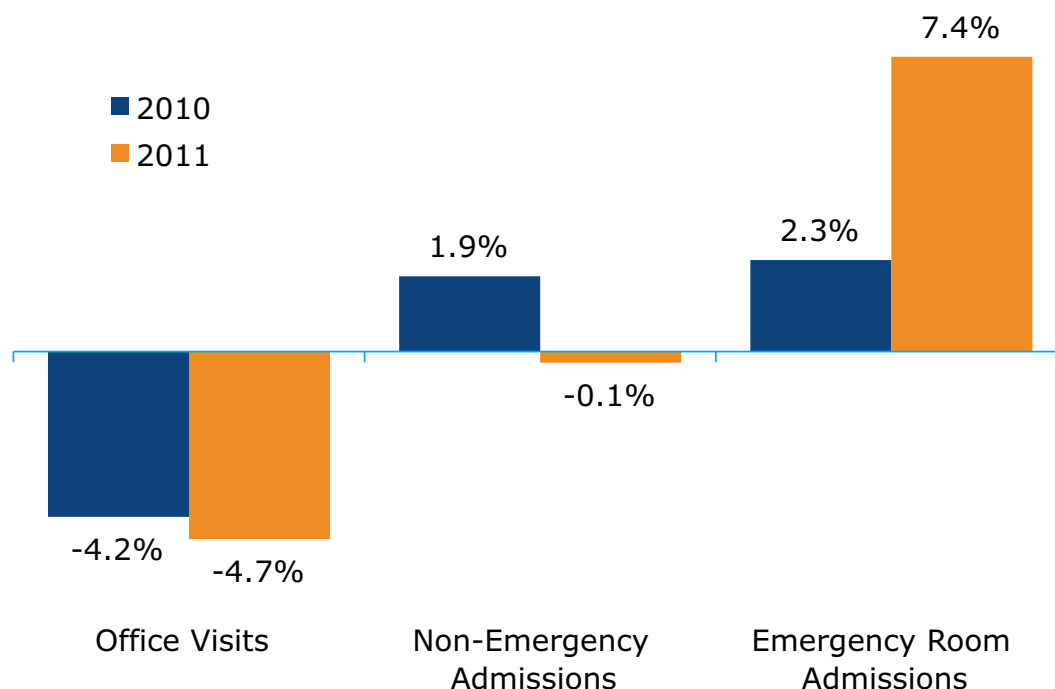


**Overall per capita utilization of medicines declined in 2011 as patient office visits and non-emergency room hospital admissions dropped, and older Americans reduced their retail drug use.**

- Total office visits and non-emergency room hospital admissions both declined in 2011 although emergency room admissions – which are relatively small in number – increased.
- The volume of medicines used in retail settings for both chronic and acute treatment declined on a per capita basis while non-retail use remained steady.
- Per capita retail prescription usage – which averaged 11.33 prescriptions per person, compared to 11.46 in 2010 – declined in 41 states and fell by more than 3% in 10 states.
- Patients 65 and over reduced their use of retail prescriptions by 3.1%, most notably in the antihypertensive class.
- Those patients aged 19-25 increased their use by 2.0%, coinciding with the first full year of Affordable Care Act provisions allowing under-26-year olds to remain covered by their parents' health insurance.

# Fewer patients made office visits while ER visits increased

## Change in Hospital Admissions & Office Visits



Source: IMS Health, LifeLink; National Disease and Therapeutic Index, Dec 2011

- The lowest-cost medical interventions are patients' visits to doctors' offices, which continued to decline in 2011.
- Non-emergency admissions generally have a lower cost for the health system and payers, so this trend is likely to contribute to rising health system costs.
- Emergency room visits increased at a higher rate in 2011, the possible result of continued high levels of uninsured patients associated with long-term unemployment.

### Chart notes

Hospital admissions data is projected from charges submitted by a statistically significant sample of over 20% of all acute care hospitals in the US. Results are generally comparable to the National Hospital Discharge Survey 2009 from the Centers for Disease Control and Prevention (CDC).

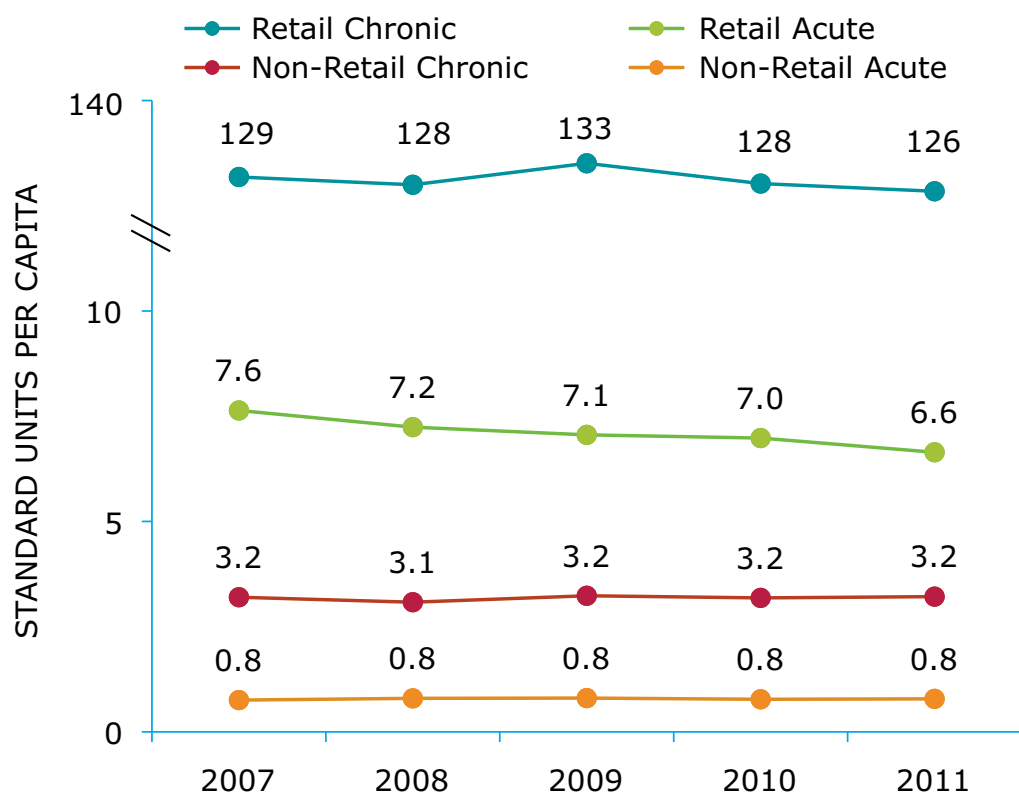
Admissions include inpatient and outpatient visits (hospital visits more or less than 24 hours respectively). Visits begin in the emergency room or elsewhere and include same-day surgeries, rehabilitation and reoccurring treatments such as chemotherapy.

All payment types are included, such as Medicare, Medicaid, Commercial Third-Party, Cash, Tricare, Workman's Compensation and Charity.

Office visits projected using a national sample of over 4,100 office-based doctors each reporting for 2 days per quarter. The margin of error for office visits is +/- 3.9%.

# Volume usage per capita declined particularly in retail settings

## Standard Unit Volume Per Capita



Source: IMS Health, MIDAS, Dec 2011; U.S. Census Bureau

- Retail per capita volume usage declined in 2011, mainly from reduced use of chronic medicines.
- Retail acute usage declined mostly due to a weaker flu season in 2011 versus 2010.
- Institutional volume remained steady on a per capita basis, consistent with the slight decrease in non-emergency hospital admissions.

### Chart notes

A Standard Unit (SU) is a single dosage unit (pill, capsule, vial or ampoule). Differences in product forms and intended usage makes Standard Units not additive at aggregate levels.

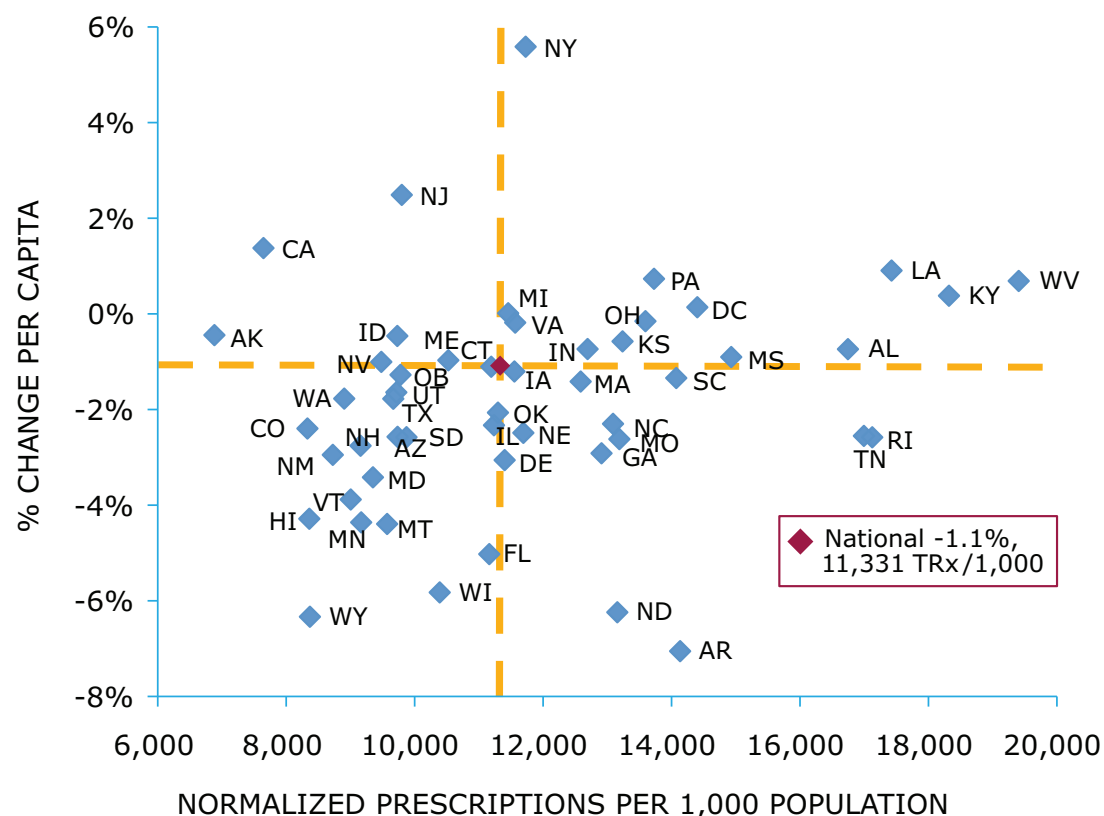
Calculation of Standard Unit per capita growth performed at form-specific level and weighted by contribution to overall spending.

Retail includes independent and chain drugstores, food store pharmacies and mail order.

Institutional includes federal and non-federal hospitals, clinics, HMO, home healthcare, long-term care facilities and prisons.

# Retail per capita volume fell in 41 states

## Normalized Prescriptions & Change



Source: IMS Health, Xponent, Dec 2011; U.S. Census Bureau

- The per capita change in retail prescription volume, by state, ranged from -7.1% to 5.6%.
- Retail prescription usage, which averaged 11.33 prescriptions per person, declined in 41 states and fell by more than 3% in 10 states.
- The states with the highest levels of per capita usage are mostly clustered in the Southeast and have disproportionately older populations with higher levels of obesity, diabetes and heart disease.
- The states with the greatest declines in usage in 2011 are clustered in the center and north of the country.

### Chart notes

Dispensed prescriptions in retail pharmacies, excluding mail order and long-term care pharmacies.

Report reflects prescription-bound products including insulins and excluding other products such as OTC.

Normalized prescriptions: prescriptions can be of different durations, and this has been shown to vary significantly across states, and to change over time. Increasing numbers of 3-month prescriptions over time result in fewer prescriptions. This analysis adjusts all prescriptions to the national average number of extended units per prescription in 2010 and calculates growth on a consistent prescription size basis.



# Patients 65+ reduced usage by 3.1%, as those 19-25 increased by 2%

## Normalized Prescriptions & Change

Patient Age	% Change		Normalized TRx Per 1,000 Population
80+	-3.4%		36,715
70-79	-1.8%		28,755
65-69	-4.3%		20,830
60-64	-1.9%		22,212
50-59	-0.3%		19,791
26-49	-1.8%		8,246
19-25		2.0%	4,165
0-18	-0.8%		3,407
Total	-1.1%		11,331

- While Americans' use of medicines per person declined by 1.1% in 2011, there was wide variation among age groups.
- The high level of increase in prescriptions by 19-25 year olds coincides with the first full year of implementation of the provision of the ACA allowing under-26-year olds to stay on their parents' health insurance.
- Seniors remained the largest users of medicines, with those over 80 using 36,715 prescriptions per 1,000 of population.
- Prescriptions for individuals 65 and over declined by 3.1% which follows a 2.7% decline in 2010, where both years were an inflection from prior years when seniors' usage of medicines grew on average at 4%.

### Chart notes

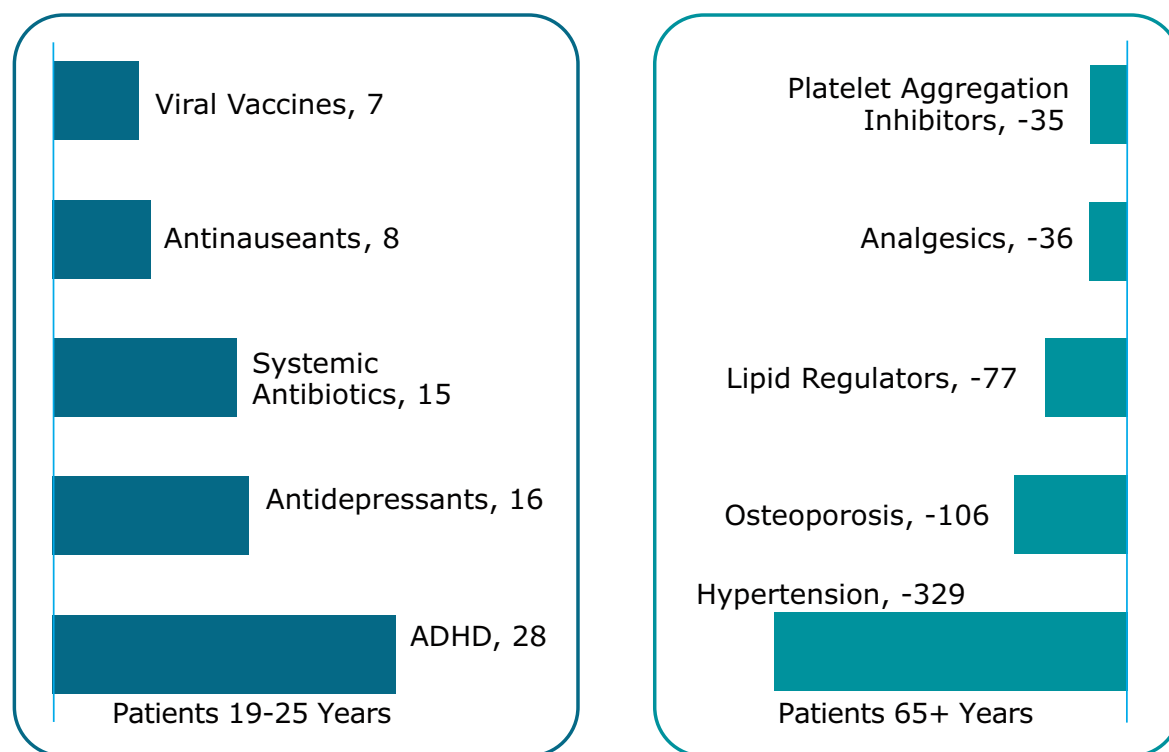
Dispensed prescriptions in retail pharmacies, excluding mail order and long-term care pharmacies.

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Source: IMS Health, Vector One: National (VONA), Dec 2011; U.S. Census Bureau

# Changes in medicine usage were concentrated in a few therapies

## Largest Changes in Normalized Prescriptions Per 1,000 Population



Source: IMS Health, Vector One: National (VONA), Dec 2011; U.S. Census Bureau

- Patients aged 19-25 used 4,165 prescriptions per 1,000 population, up 2.0% over 2010, and were the only age group to increase usage in 2011.
- The increases were concentrated in several commonly prescribed therapies including ADHD and antidepressants.
- Seniors aged 65+ used on average 28,767 prescriptions per 1,000 population, down 3.1%.
- The largest reduction was from hypertension drugs, while osteoporosis declines coincide with increasing evidence of the dangers of long-term use of these medicines.

### Chart notes

Dispensed prescriptions in retail pharmacies, excluding mail order and long-term care pharmacies.

Normalized prescriptions: prescriptions can be of different durations and this has been shown to vary significantly across states and to change over time. Increasing numbers of 3-month prescriptions over time result in fewer prescriptions. This analysis adjusts all prescriptions to the national average number of extended units per prescription in 2010, and calculates growth on a consistent prescription size basis.

Charts show the largest changes in per capita prescriptions. The two charts are not to scale.

# Patient Payment for Medicines

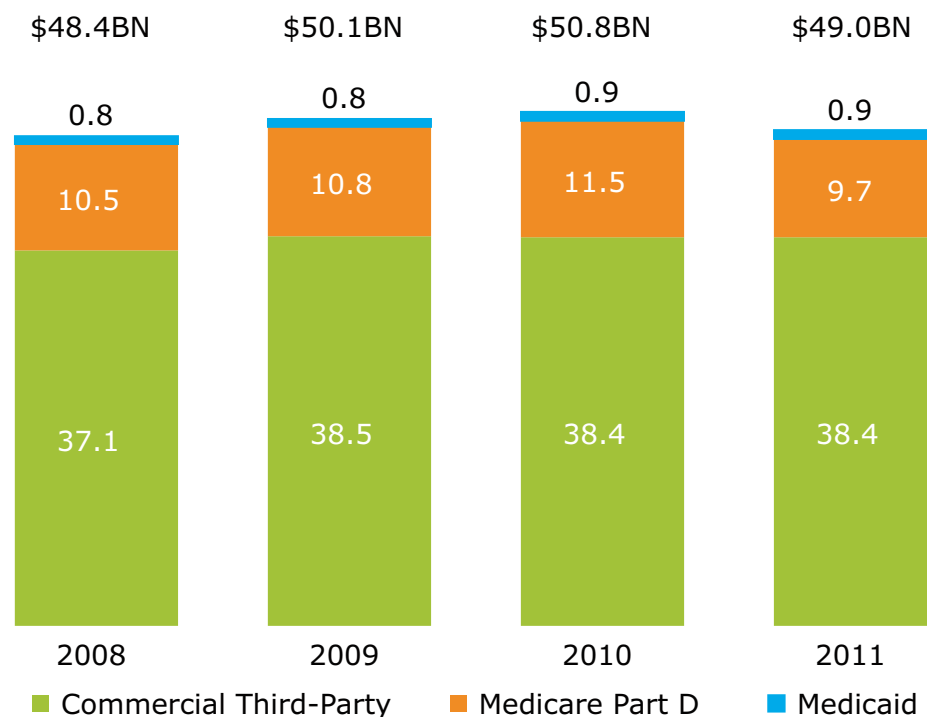


**Patients with insurance spent \$1.8 billion less out-of-pocket for medicines in 2011, compared to 2010, as the average copay declined, especially for seniors participating in the Medicare Part D program.**

- Patients with insurance paid \$49 billion out-of-pocket for retail medicines, down from \$50.8 billion in 2010.
- The majority of out-of-pocket costs were incurred by commercially insured patients.
- The average copay for 75% of all prescriptions was \$10 or less, but as much as \$40 on average for branded drugs covered by commercial insurance plans.
- The largest decline in out-of-pocket spending was by seniors covered by the Medicare Part D program, including the impact of subsidies introduced as part of the Affordable Care Act.
- Patients increased their use of copay coupons or vouchers provided by pharmaceutical manufacturers, although their use was limited to less than 5% of dispensed brand prescriptions.

# Out-of-pocket payments declined to \$49.0Bn in 2011

## Insured Patients' Retail Out-of-Pocket Costs



Source: IMS Health, National Prescription Audit; Plantrak, Dec 2011

- The decline in overall out-of-pocket spending was the first on record, and largely related to the introduction of the “donut-hole” subsidy for Medicare Part D beneficiaries, a key provision of the Affordable Care Act.
- Out-of-pocket spending by commercial third-party insured patients and Medicaid patients was flat relative to 2010.

### Chart notes

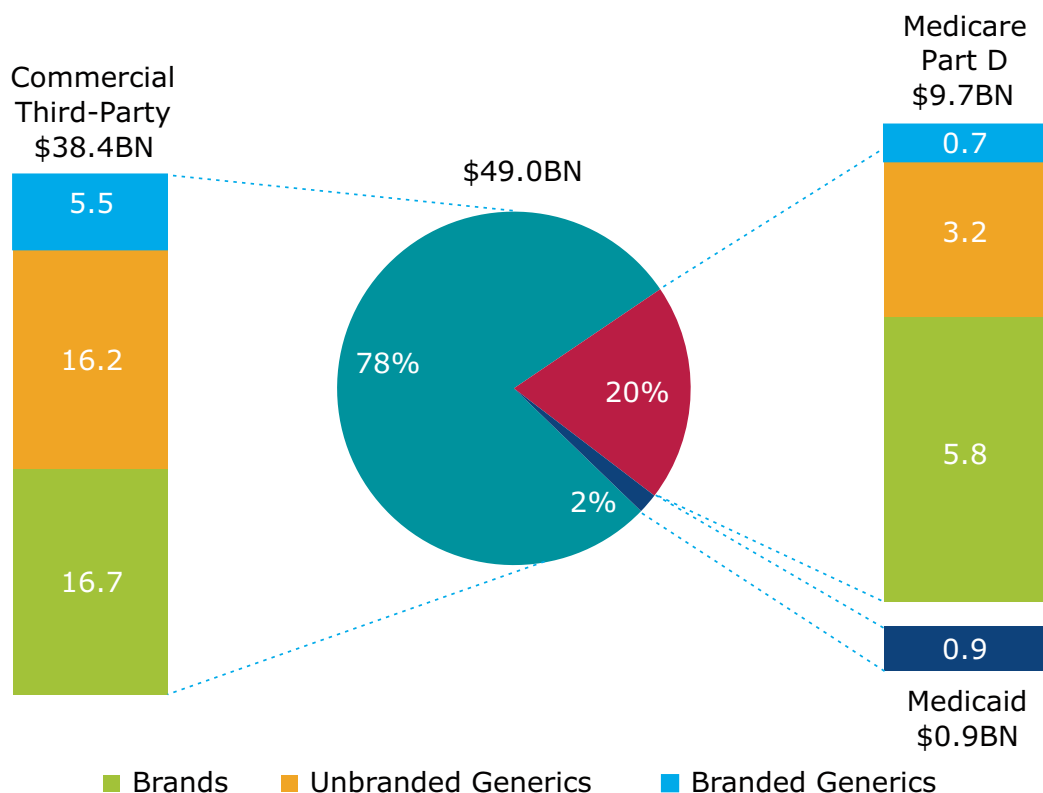
Out-of-pocket costs at retail pharmacies for patients with private insurance, Medicare Part D or Medicaid.

Medicaid includes only Fee for Service Medicaid.



# Commercially insured patients paid most of the out-of-pocket costs

## Insured Patients' Retail Out-of-Pocket Costs



Source: IMS Health, National Prescription Audit; Plantrak, Dec 2011

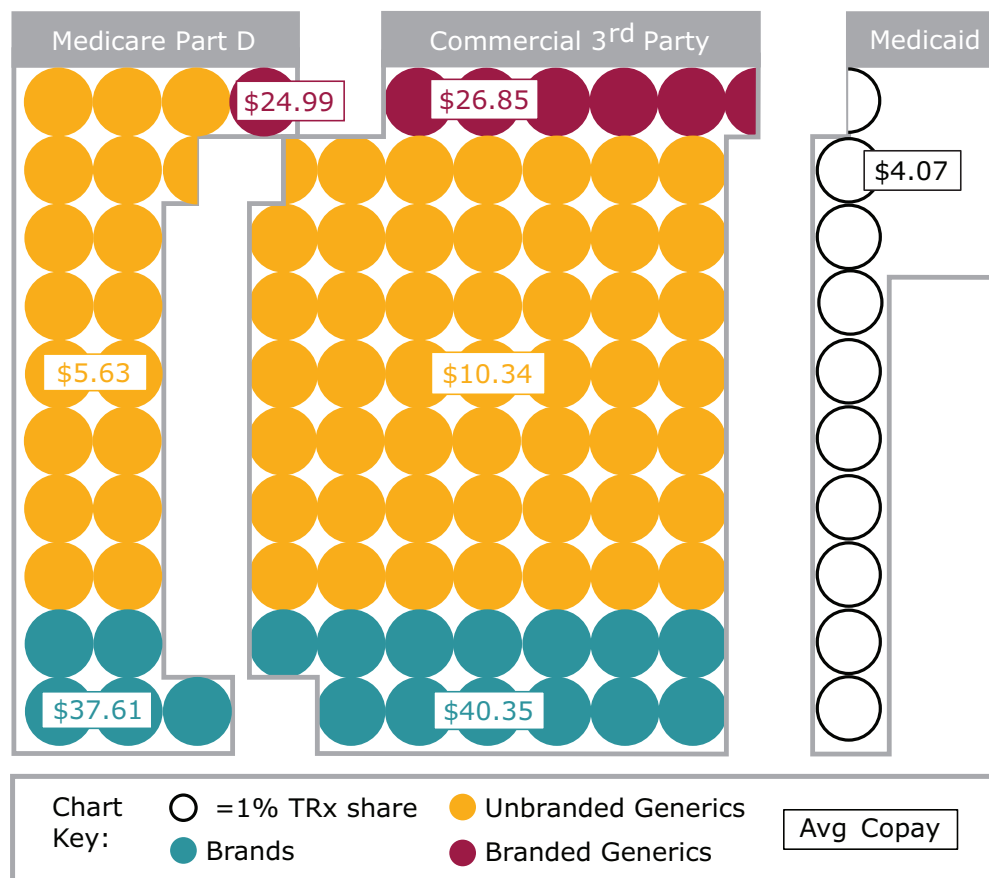
- Patients with insurance paid \$49.0Bn out-of-pocket for retail medicines, of which the largest share was by individuals with commercial third-party insurance.
- Less than half of out-of-pocket spending was for branded medicines, as insurance benefits often cover a greater proportion of branded medicines than that of generics.

### Chart notes

Out-of-pocket costs at retail pharmacies for patients with private insurance, Medicare Part D or Medicaid. Excludes patients without insurance coverage. Medicaid includes only Fee for Service Medicaid.

# Over 75% of prescriptions carried a copay of \$10 or less

## Out-of-Pocket Costs for Retail Prescriptions



Source: IMS Health, National Prescription Audit; Plantrak, Dec 2011

- The average copay for 75% of all prescriptions was \$10 or less, but as much as \$40 on average for branded drugs covered by commercial insurance plans.
- Brands accounted for 18% of prescriptions and 46% of out-of-pocket costs.
- While Medicaid represented 9.5% of prescriptions, it accounted for only 2% of patient out-of-pocket costs, in line with the design of the program.
- Medicare Part D patients' brand prescription costs were similar to commercial third-party insured patients; however, on average, they paid almost half as much for generic drugs.

### Chart notes

Out-of-pocket costs at retail pharmacies for patients with private insurance, Medicare Part D or Medicaid.

Excludes patients without insurance coverage.

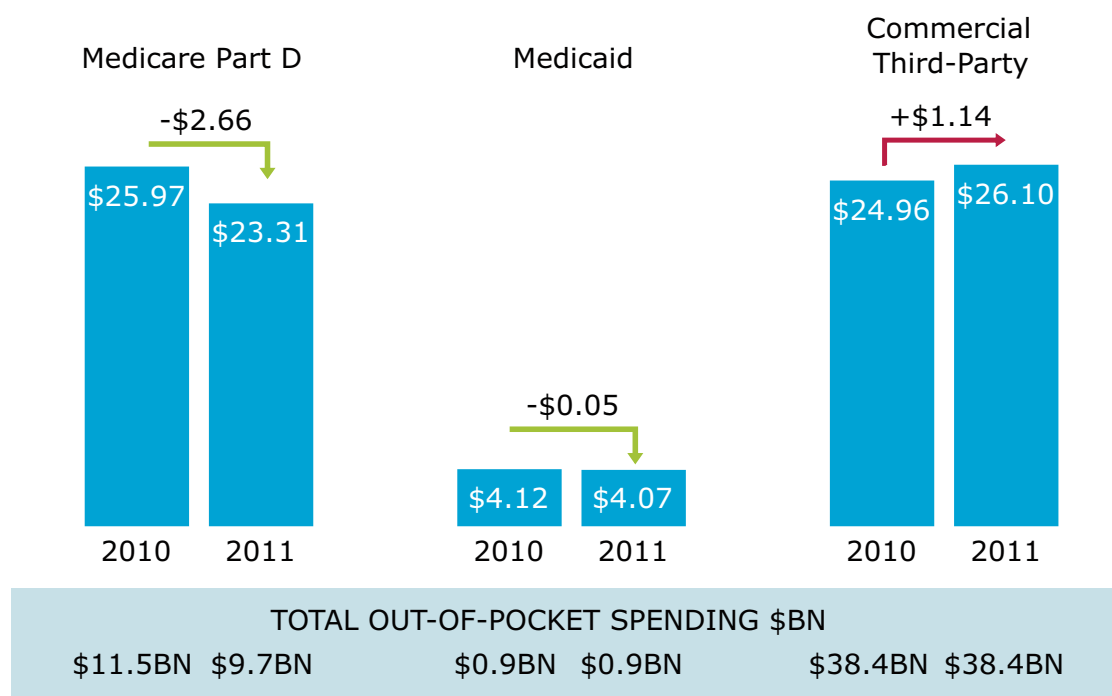
Medicaid out-of-pocket costs and prescriptions are not segmented by product type.

Medicaid includes only Fee for Service Medicaid.

Each circle represents 1% of retail prescriptions for insured patients.

# Average patient costs declined for Medicare Part D and Medicaid

## Average Copay By Payment Type



Source: IMS Health, National Prescription Audit; Plantrak, Dec 2011

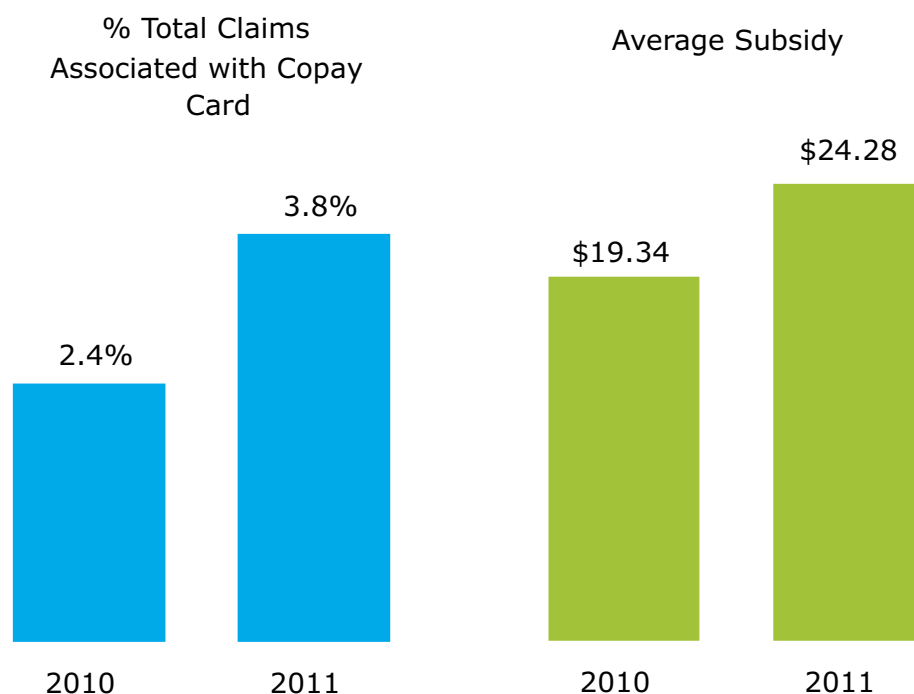
- The largest decline in out-of-pocket spending was for seniors covered by Medicare Part D, and included the impact of subsidies introduced as part of the Affordable Care Act.
- Out-of-pocket spending by commercial third-party insured patients and Medicaid patients was flat relative to 2010, as volume changes offset changes in copay levels.

### Chart notes

Out-of-pocket costs at retail pharmacies for patients with private insurance, Medicare Part D or Medicaid.

# Patients increased their use of copay coupons and vouchers

## Use of Copay Coupons and Vouchers



Source: IMS Health, LifeLink, Dec 2011

- Patients increased their use of copay coupons or vouchers provided by pharmaceutical manufacturers, although their use was limited to less than 5% of dispensed brand prescriptions.
- Coupons and vouchers typically helped to reduce a patient's copay from a non-preferred brand copay level of \$35 to \$50, and to a more affordable level.
- The use of coupons and vouchers increased both because of patients' economic concerns, as well as from drug manufacturers' focus on ensuring patients start and remain on therapy with their medicines.

### Chart notes

Analysis based on all Rx claims where the brand was known to have provided a copay card or voucher program during the time periods of interest: Apr-Dec 2010 and Apr-Dec 2011. There were approximately 395 brands that met this criteria which, in aggregate, represented 44% of total branded prescription claims.



# Spending on Medicines

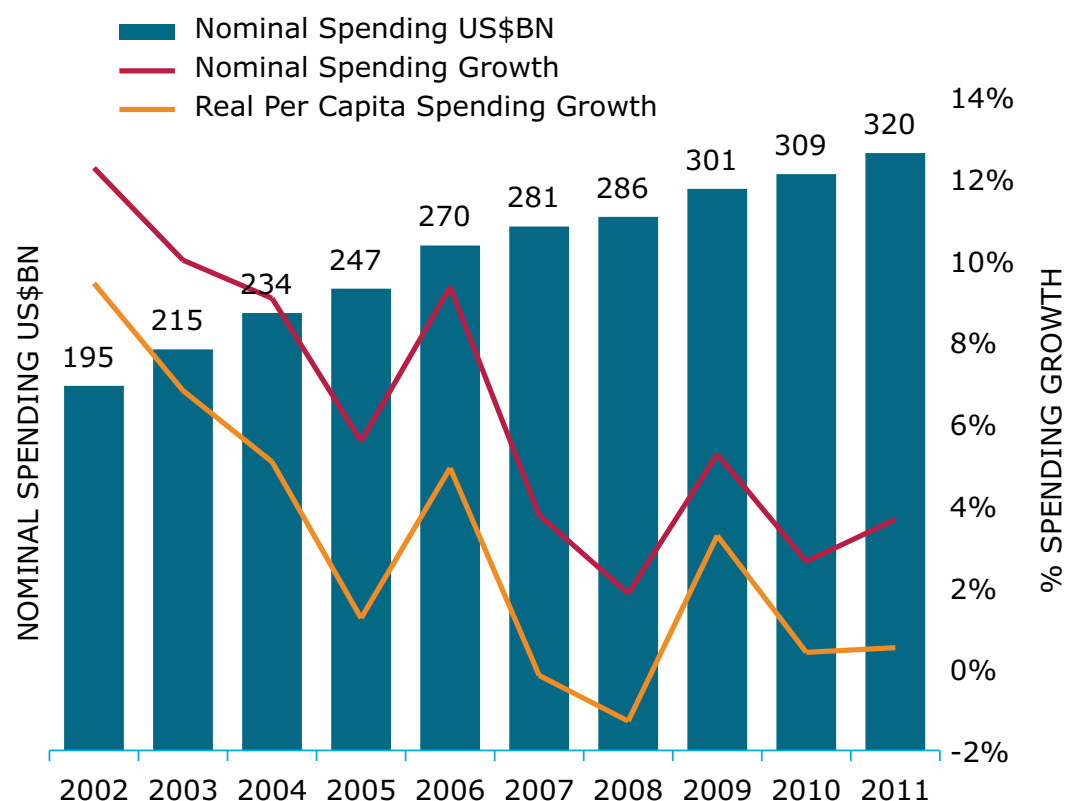


**Total spending on medicines, on a real per capita basis, increased by 0.5%, as declining use of branded drugs and greater availability of lower cost generics offset price increases and higher spending on new medicines.**

- Nominal spending reached \$320 billion in 2011, up 3.7%.
- Spending on branded products was up 2.2% in 2011.
- Lower volume for branded products contributed to \$5.6 billion in lower spending, offset by unadjusted price increases of \$18.5 billion – which are estimated to be \$12.6 billion after adjusting for incremental rebates and discounts.
- Losses of patent exclusivity led to \$14.9 billion lower spending on affected medicines, taking the five year total “patent dividend” to \$65.2 billion.
- Spending on new brands reversed a declining trend and contributed \$7.7 billion to incremental spending.
- Generics reached 80% of dispensed prescriptions and spending in this segment grew by \$5.6 billion in 2011.
- Overall spending on medicines continued to be concentrated on traditional small molecule pills dispensed through retail pharmacies, even as growth in these segments was outpaced by biologics, specialty, injectables and institutional channels – which accounted for as much as 30% of total spending.

# Real per capita spending on medicines increased by 0.5% in 2011

## Spending & Growth 2002-2011



Source: IMS Health, National Sales Perspectives, Dec 2011

- Nominal spending on medicines increased by 3.7% in 2011, up from the 2.6% growth in 2010, and continuing the trend of 5% or lower growth per year that has occurred since 2007.
- Total spending in 2011 was \$320Bn, an increase of about \$50Bn since 2006 and \$125Bn since 2002.
- After adjusting for GDP and population growth, real per capita spending increased by 0.5% in 2011.
- Lower levels of growth in spending in recent years reflect broad dynamics of lower volume growth, increased use of generics, loss of patent protection for major branded products and less spending on new drugs.

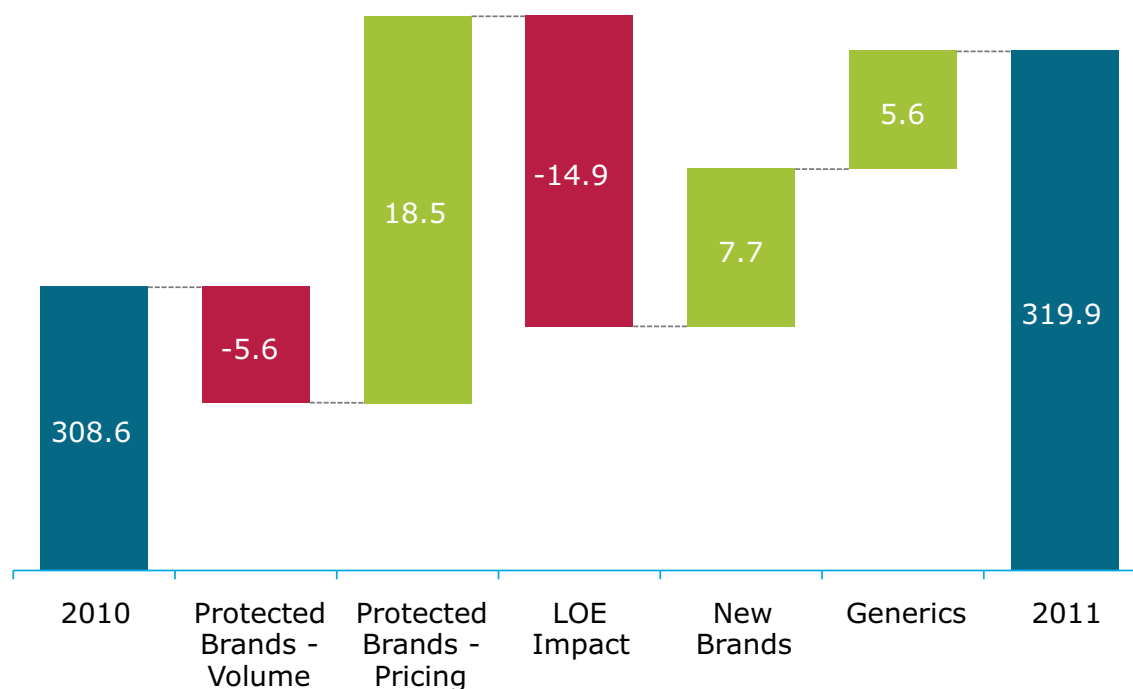
### Chart notes

Measures total value of pharmaceutical sales, including generics, branded products, biologics, small molecules, retail and non-retail channels.

Value measured at Trade Price – the price paid to wholesalers or manufacturers by retail and non-retail channels and excluding off-invoice discounts and rebates that lower net prices received by manufacturers.

# Spending changes occurred in 5 major segments

## Components of Change in Total Spending \$Bn



Source: IMS Health, National Sales Perspectives, Dec 2011

- Total spending on medicines increased from \$308.6Bn in 2010 to \$319.9Bn in 2011.
- The decline in the volume of protected branded products reduced spending in 2011 by \$5.6Bn compared to 2010.
- Increases in the pricing of protected branded products – without consideration to off-invoice discounts or rebates – raised spending by \$18.5Bn.
- Brands losing patent protection or exclusivity in 2011 resulted in a reduction in spending of \$14.9Bn.
- Spending growth for new brands was \$7.7Bn in 2011 up from \$5.2Bn in 2010.
- Spending on generics – including both volume and price effects – increased by \$5.6Bn in 2011 compared to 2010.

### Chart notes

Segments are mutually exclusive and reflect the change in spending between 2010 and 2011 in billions of dollars.

Protected brands (brands that have not reached patent expiry) split based on growth through pricing dynamics and volume (absent pricing dynamics).

New Brands segment includes all 2010 and 2011 launches.

LOE - Loss of Exclusivity - includes branded products that lost exclusivity during 2011 or previous years.

# Declining volume of protected brands reduced spending by \$5.6Bn

## Protected Brand Volume Growth \$Bn



Source: IMS Health, National Sales Perspectives, Dec 2011

- Declining spend due to volume for protected brands, without the impact of pricing or patent expiries, continued in 2011.
- The largest volume spending increases in 2011 were Humalog<sup>®</sup> Kwikpen<sup>™</sup> (insulin lispro), Lucentis<sup>®</sup> (ranibizumab), Humira<sup>®</sup> (adalimumab), Lantus<sup>®</sup> SoloSTAR<sup>®</sup> (insulin glargine) and Opana<sup>®</sup> ER (oxymorphone hydrochloride).
- The products with significant volume declines, each over \$500Mn, were due to upcoming patent expiries. These include: Actos<sup>®</sup> (pioglitazone) which expires in 2012; Epogen<sup>®</sup> (epoetin alfa) which also has had declining volume due to safety concerns; and Nexium<sup>®</sup> (esomeprazole) which expires in 2014.

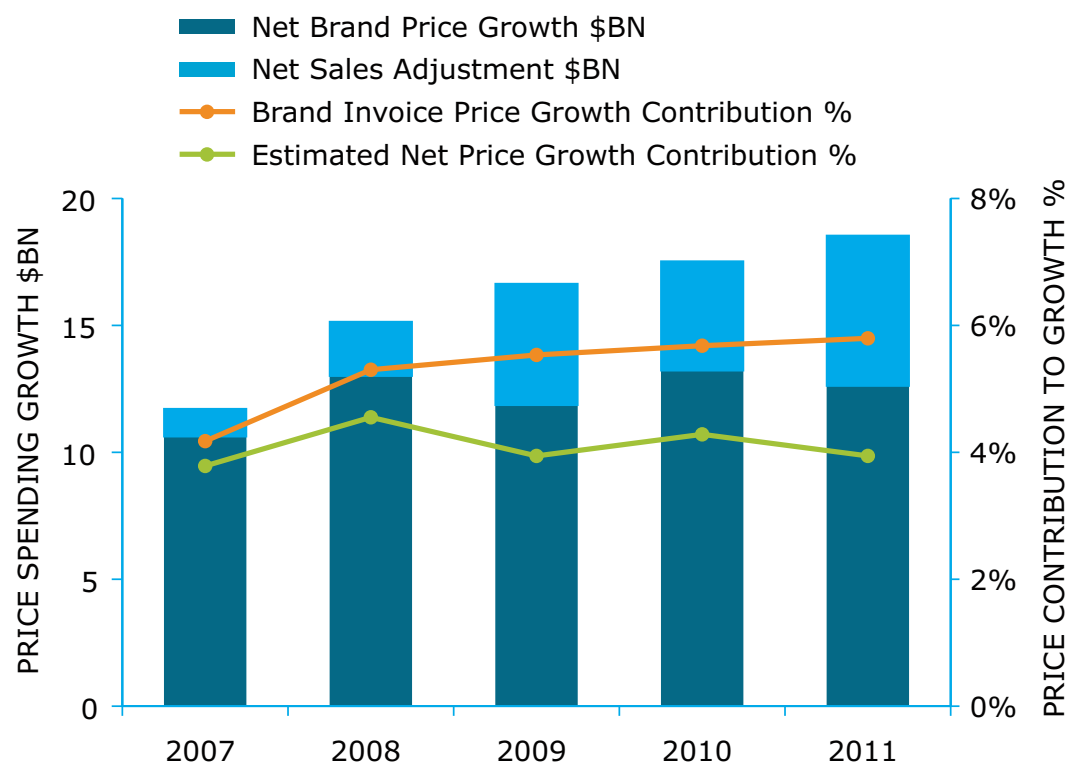
### Chart notes

Protected brands include brands before loss of exclusivity; new brands on the market for less than 24 months are excluded.

Volume growth is defined as dollar growth driven by volume and mix changes, excluding price changes.

# Spending due to brand pricing trended up, but was offset by rebates

## Protected Brand Price Spending Growth



Source: IMS Health, National Sales Perspectives, Dec 2011

- Spending on protected brands increased by \$18.5Bn in 2011 due to invoice price changes, compared to \$17.5Bn in 2010.
- Growth of spending due to protected brand invoice pricing contributed to overall spending growth by 5.8% in 2011, compared to 5.7% in 2010.
- Protected brands invoice price increases averaged 9.5% in 2011, up from 8.8%.
- Increasing levels of off-invoice discounts and rebates have accompanied these invoice price increases resulting in an estimated \$5.9Bn or 1.9% (+/- 0.25%) lower net price growth contribution.
- Trends for net pricing contribution are estimated to remain around 4%.

### Chart notes

Protected brands include brands before loss of exclusivity; new brands on the market for less than 24 months are excluded.

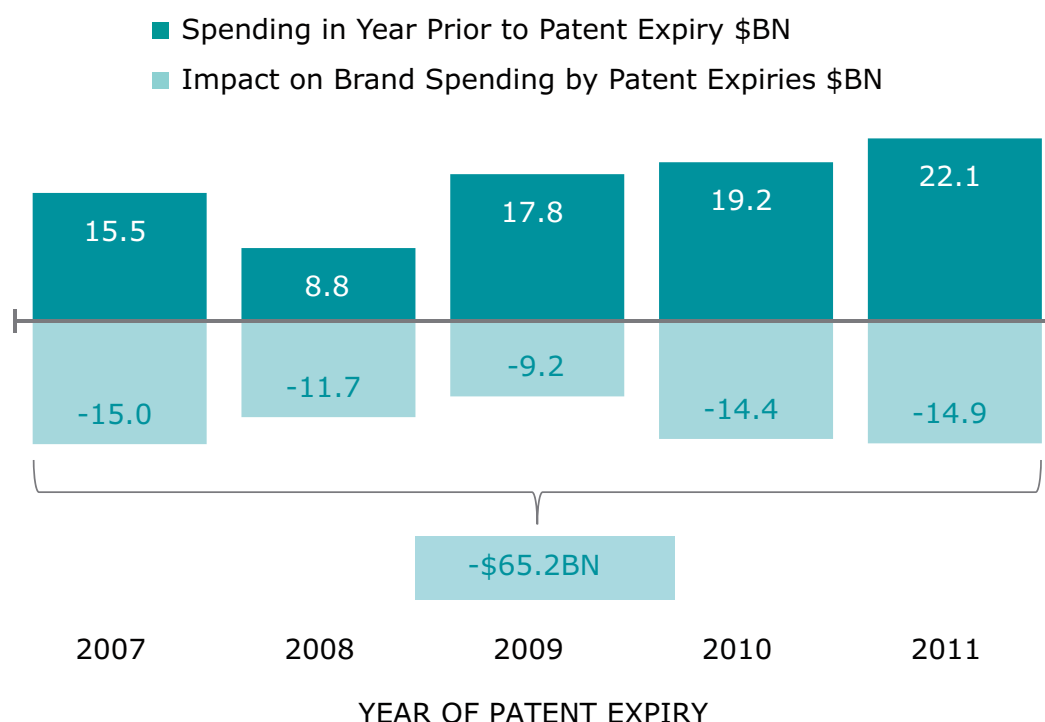
Price spending growth is dollar growth driven by invoice price changes and excludes the impact of rebates and contract pricing agreements.

Price contribution to growth is contribution to market growth and does not reflect a price growth rate.

Estimated net price growth is based on a comparison of company reported net sales and IMS Health reported sales at invoice prices from wholesaler transactions.

# Brand spending has declined by \$65.2Bn since 2007 due to expiries

## Pre-Expiry Spending and Expiry Impact



Source: IMS Health, MIDAS, Dec 2011

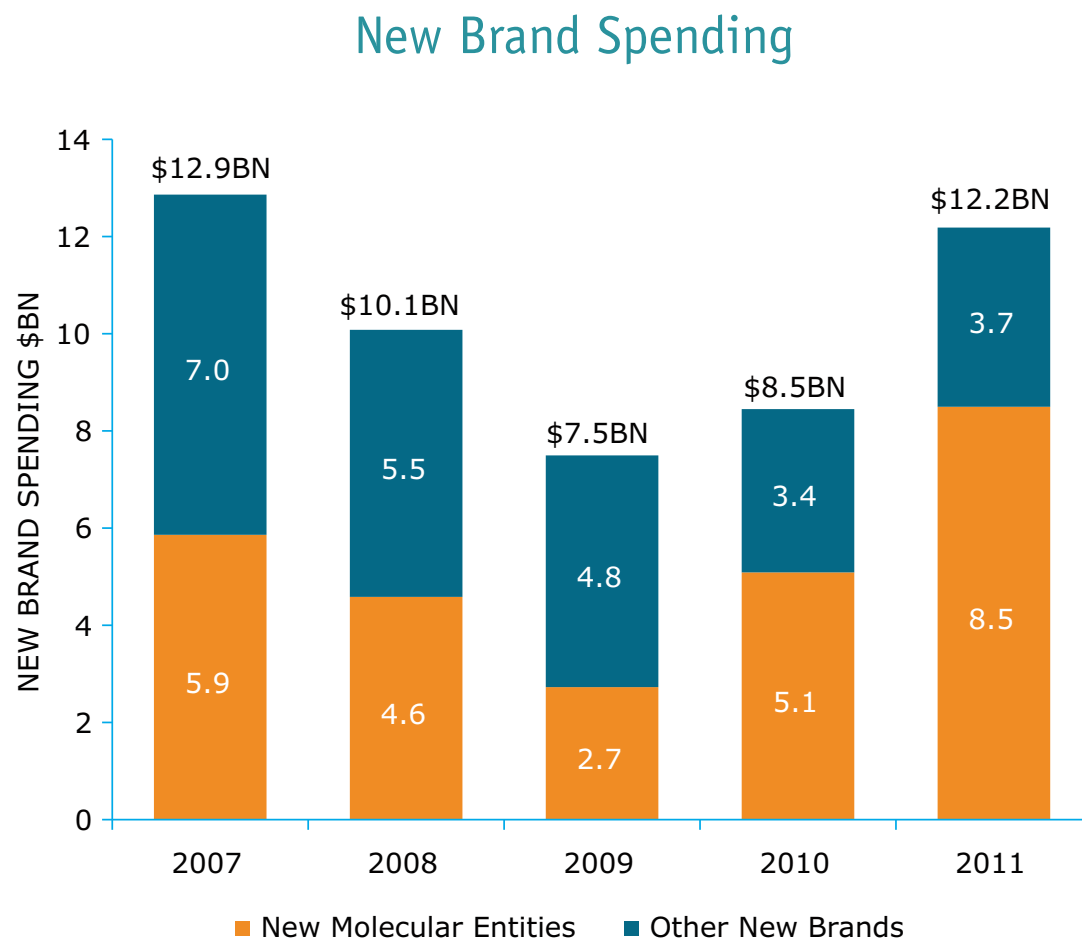
- The “patent dividend” – the savings to the health system due to patent expiries – was \$65.2Bn over the 5-year period ending 2011.
- Brands first exposed to generics totaled \$22.1Bn in 2011, and the full impact of cost reductions associated with generic entry has not yet been realized because key expiries came late in the year.
- The declines of spending associated with patent expiry, including those which expired before 2011, was \$14.9Bn, which is similar to the level seen in 2010.
- Major products with patent expiries in 2011 included Lipitor® (atorvastatin), Advair Diskus® (fluticasone propionate), Zyprexa® (olanzapine), Levaquin® (levofloxacin) and Concerta® (methylphenidate), which each had annual spending above \$1Bn during the 12 months prior to their patent expiry.

### Chart notes

Sales in prior year of brands that lost patent protection in each year.



# New brand spending grew to over \$12 billion in 2011



Source: IMS Health, National Sales Perspectives, Dec 2011

- Total drug spending on products that have been available to patients for less than 24 months increased to \$12.2Bn in 2011, up from \$7.5Bn in 2009.
- Spending on new molecular entities reached a 5-year high of \$8.5Bn compared to \$2.7Bn in 2009.
- Spending on new medicines represented 5.5% of total brand spending, still below the 6.1% level seen in 2007.
- In 2011, there were 330 brands which were less than 2 years old, including 77 new molecular entities and 253 other branded products.
- Average spending per new molecular entity was \$110Mn in 2011, up from \$45Mn in 2009.
- Other new brands include those approved by FDA following their focus on reviewing unapproved drugs, 80% of which had spending of less than \$10Mn in 2011.

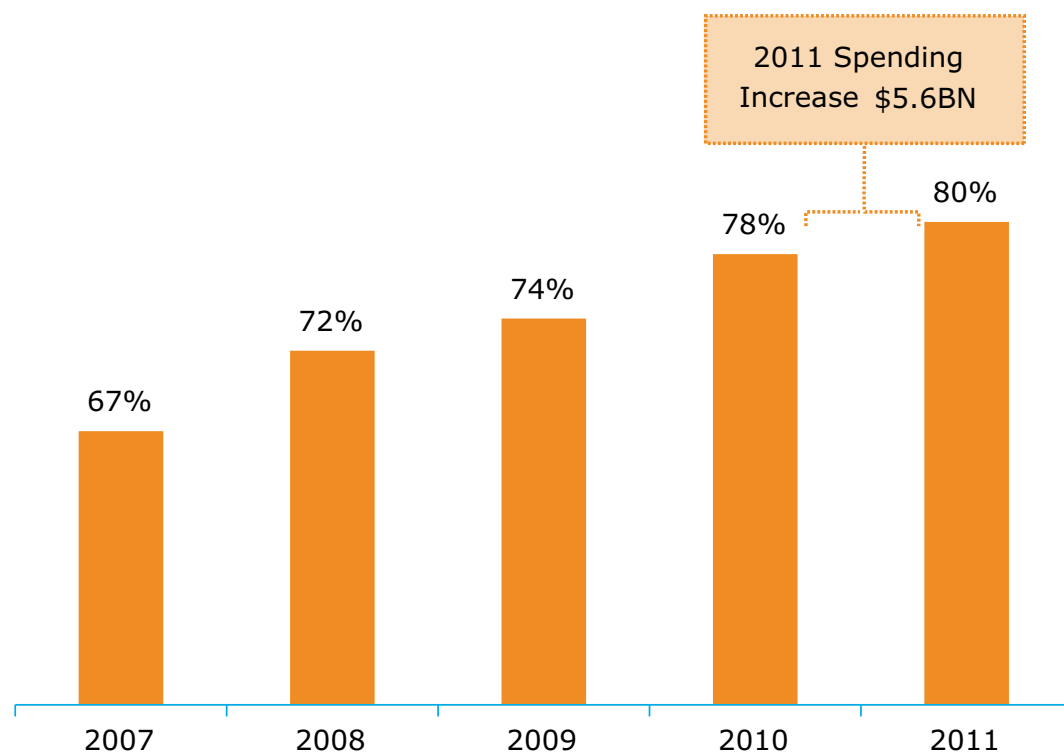
## Chart notes

New brands defined as brands launched in the prior 24 months. Spending on medicines in the group of products marketed for less than 24 months in 2011 increased by \$7.7Bn, from \$4.6Bn in 2010 to \$12.2Bn in 2011. New molecular entities include both small molecules and biologic medicines.

Chart has been adjusted to reflect the complete spending on Plevnar 13®, which is understood to be under-reported by IMS Health.

# 80% of prescriptions were dispensed as a generic in 2011

## Generic Share of Prescriptions



Source: IMS Health, National Prescription Audit, Dec 2011

- Spending on generics increased by \$5.6Bn as volume reached 80% of prescriptions.
- Generics are now dispensed 94% of the time where a generic form is available, up 1% from 2010.
- Patent expiries that occurred in late 2011 had not yet impacted utilization or spending by the end of the year, with the majority of the increased usage of generics driven by expiries in 2010 and early 2011, including Lovenox<sup>®</sup>, Aricept<sup>®</sup> and Effexor XR<sup>®</sup>.
- Generics now make up 27% of total spending.

### Chart notes

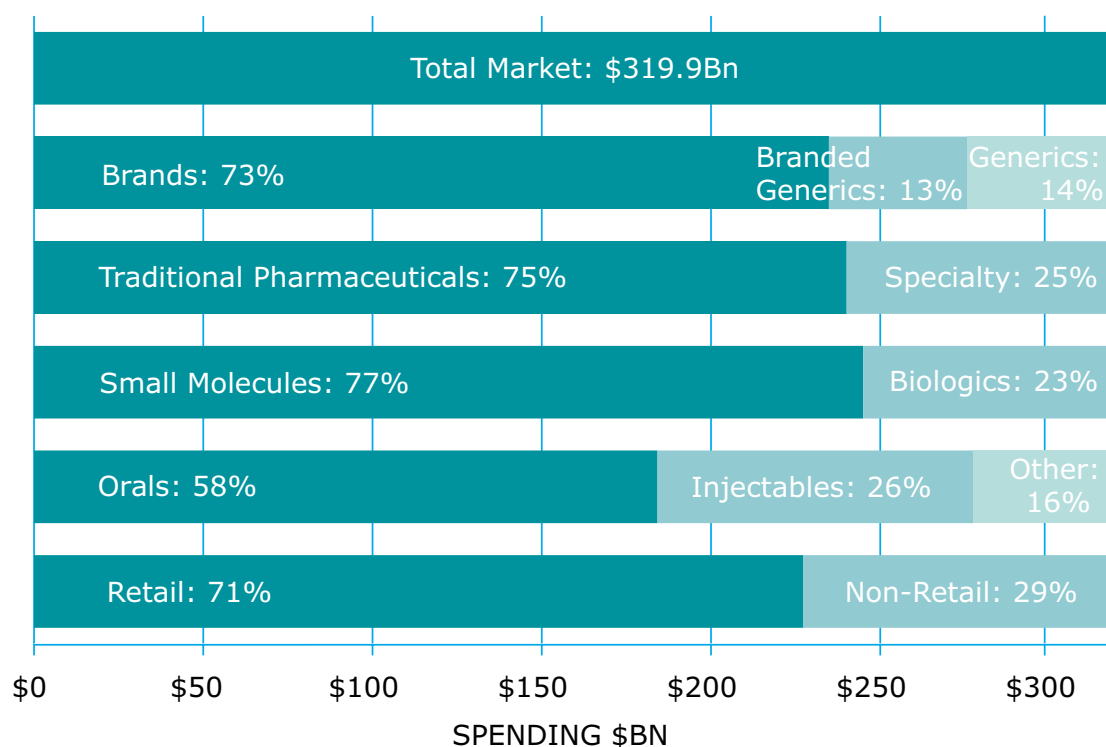
Includes all prescriptions dispensed through retail pharmacies, including independent and chain drug stores, food store pharmacies and mail order as well as long-term care facilities.

Generics include branded and unbranded generic medicines dispensed in retail pharmacies, mail order and long-term care pharmacies.

Prescription counts are not adjusted for length of therapy. 90-day and 30-day prescriptions are both counted as one prescription.

# Spending was concentrated on small molecule pills in pharmacies

## 2011 Spending



Source: IMS Health, National Sales Perspectives, Dec 2011

- Spending on branded drugs totaled \$235Bn, or 73% of total spending, with branded and unbranded generics accounting for 27%.
- Traditional medicines were 75%, while specialty reached 25% and includes a variety of treatments for serious diseases including cancer, autoimmune diseases, HIV and multiple sclerosis.
- Small molecule spending totaled \$245Bn, as biologics reached \$75Bn.
- Oral forms of medicines remained the most common form, while injectables were 26% of spending.
- Retail channels accounted for 71% of the total and included an increasing amount of injectable medicines that patients are able to self-administer.

### Chart notes

Each bar represents total spending in nominal dollars using a distinct segmentation of overall spending; the percentage refers to the segments' share of the total. Brands are those products with current or former patent protection or other forms of market exclusivity. Specialty, Traditional, and Biologics segments are based on proprietary IMS Health definitions.

# Usage and Spending in Major Therapy Areas



**Nearly one-third of spending was concentrated in five therapy areas, each of which grew faster than the overall market, and exhibited a range of dynamics related to new treatments and growing diagnosis of the related diseases.**

- Oncologics spending was \$23.2 billion in 2011, up 4.2% from innovative new targeted therapies and offset by patent expiries.
- Spending for respiratory treatments reached \$21 billion, up \$1.7 billion, more than half of which came from anti-asthmatic products. Overall, 7.4 million patients were regularly taking asthma or COPD medicines.
- 19.8 million Americans regularly used cholesterol medicines, up 160,000 from 2010, while spending increased by \$1.4 billion. Usage shifted to other medicines in the class following a safety warning for the higher dosage versions of generic simvastatin.
- Antidiabetes spending grew by \$1.9 billion, driven by insulins and further uptake of newer generation therapies. 11 million patients were treated with diabetes medicines.
- 3.1 million patients were treated for a variety of mental health conditions using antipsychotic medications, resulting in \$18.2 billion in overall spending.

# Nearly one-third of spending was concentrated in 5 therapies

## Spending in Leading Therapy Areas

Therapy Area	\$BN	% Growth
Oncologics	23.2	4.2%
Respiratory Agents	21.0	8.8%
Lipid Regulators	20.1	7.2%
Antidiabetics	19.6	10.7%
Antipsychotics	18.2	12.7%
Autoimmune Diseases	12.0	12.9%
Antidepressants	11.0	-5.8%
HIV Antivirals	10.3	11.1%
Anti-Ulcerants	10.1	-15.4%
Narcotic Analgesics	8.3	-1.8%
ADHD	7.9	17.0%
Antiplatelets	7.8	10.4%
Angiotensin II	7.6	-11.9%
Multiple Sclerosis	7.1	22.5%
Vaccines	6.3	10.5%
Anti-Epileptics	5.9	4.6%
Hormonal	5.2	7.3%
Erythropoietins	5.1	-16.2%
Immunostim. Agents	4.5	8.1%
Antivirals (excl. HIV)	3.7	14.8%

Specialty

Traditional

- Absolute spending growth gains were highest for antipsychotics, antidiabetics, respiratory agents, autoimmune diseases and lipid regulators.
- Standard of care therapies have now become available as generics in several leading traditional classes including lipid regulators and antipsychotics.
- Specialty class spending was up more than 10% in multiple sclerosis, autoimmune diseases and HIV antivirals, but up less than 5% in oncology.
- 14 classes had over \$7Bn in spending in 2011, with erythropoietin spending falling from \$6.1Bn to \$5.1Bn, in 2011, due to volume declines.

### Chart notes

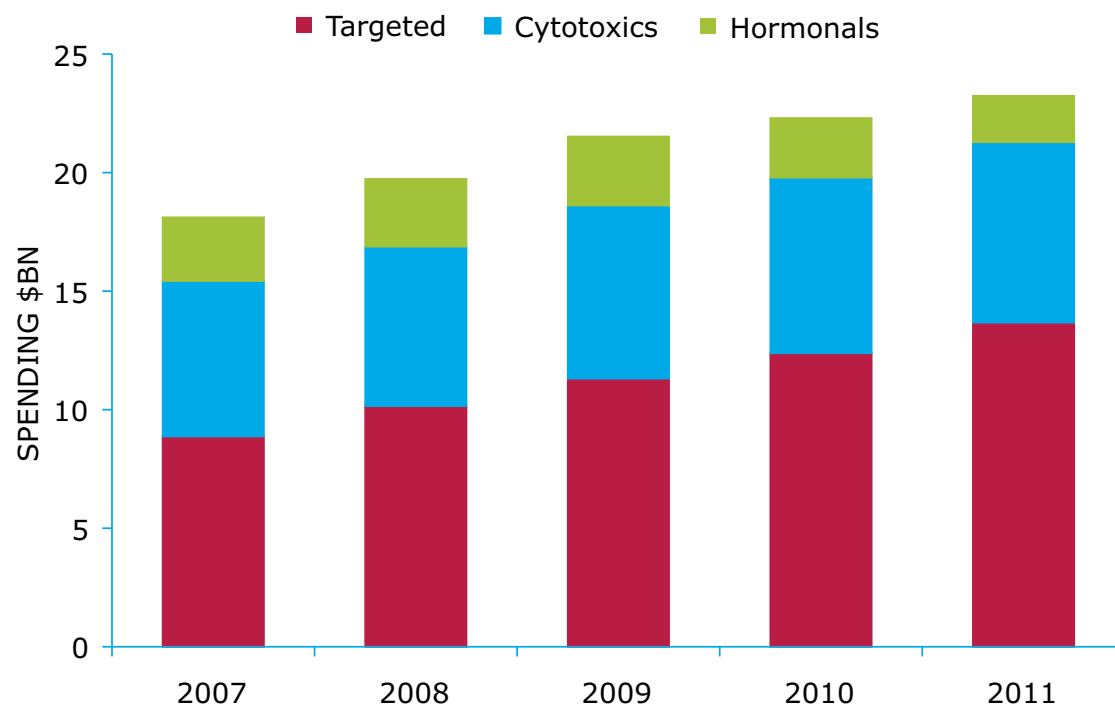
Specialty, Traditional and therapy area definitions based on proprietary IMS Health definitions.

Spending measured at the price paid to wholesalers or manufacturers by retail and non-retail channels and excluding off-invoice discounts and rebates that lower net prices received by manufacturers.

Source: IMS Health, National Sales Perspectives, Dec 2011

# Oncologics spending reached \$23.2Bn in 2011

Oncology Spending by Area



Source: IMS Health, National Sales Perspectives, Dec 2011

- Oncologics led all classes in spending in 2011, at \$23.2Bn.
- Spending grew by nearly \$1.1Bn, which was higher than the \$0.8Bn in 2010.
- Targeted agents grew by \$1.3Bn, higher than the \$1.1Bn in 2010. New targeted agents launched in 2011 included ipilimumab, vemurafenib and crizotinib.
- Hormonal therapies, typically for breast and prostate cancer, reduced spend by \$0.6Bn after letrozole became generically available in 2011.

## Chart notes

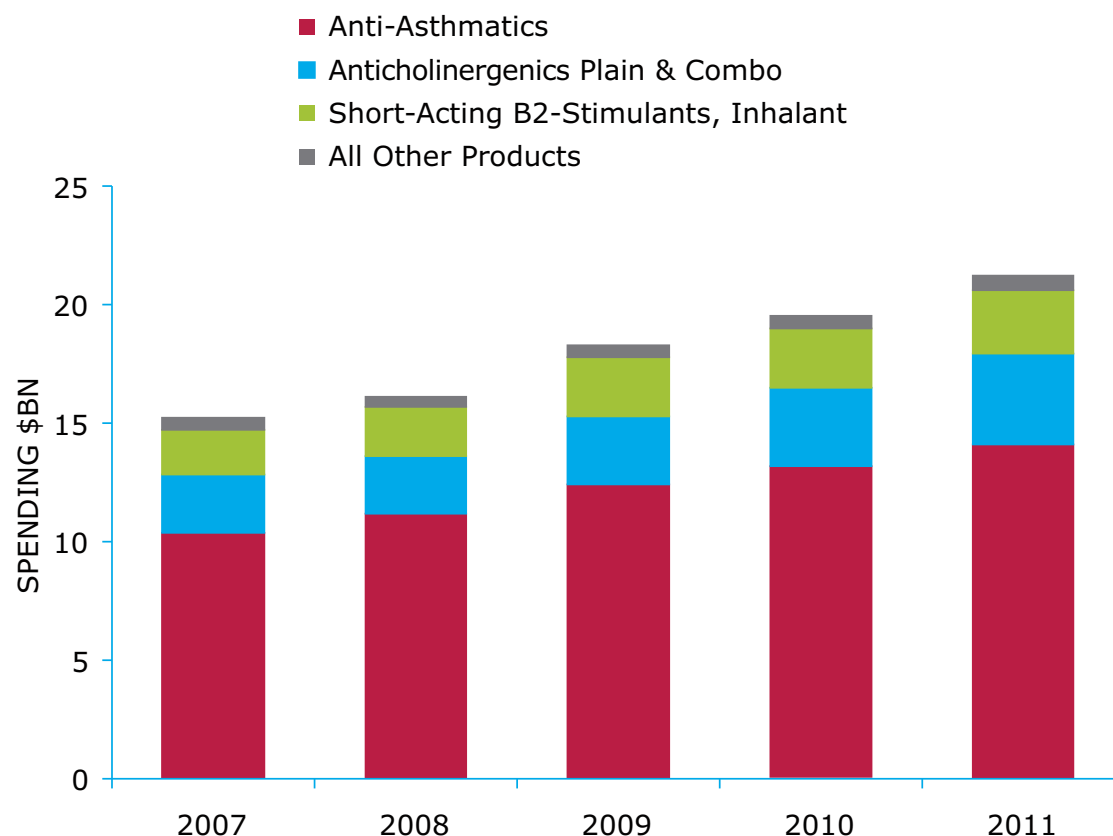
Therapy areas are based on proprietary IMS Health definitions.

Spending growth defined as dollar growth driven by price, volume, new products and mix changes.



# Asthma and COPD accounted for \$21.0Bn in spending

## Respiratory Agent Spending by Area



Source: IMS Health, National Sales Perspectives, Dec 2011

- Respiratory agent spending was \$21.0Bn in 2011. Spending growth was \$1.7Bn in 2011, up from \$1.2Bn in 2010 due to continued spending on anti-asthmatics which led the change.
- Anti-asthmatics made up two-thirds of the spending within the respiratory classes in 2011, at \$14Bn. Leading anti-asthmatic therapies included combination product fluticasone/salmeterol and montelukast.
- Anticholinergic agents used in the treatment of COPD contributed \$0.5Bn in growth versus \$0.4Bn in 2010. Leading therapies in this class included tiotropium bromide inhalation powder and albuterol and ipratropium inhalation.

### Chart notes

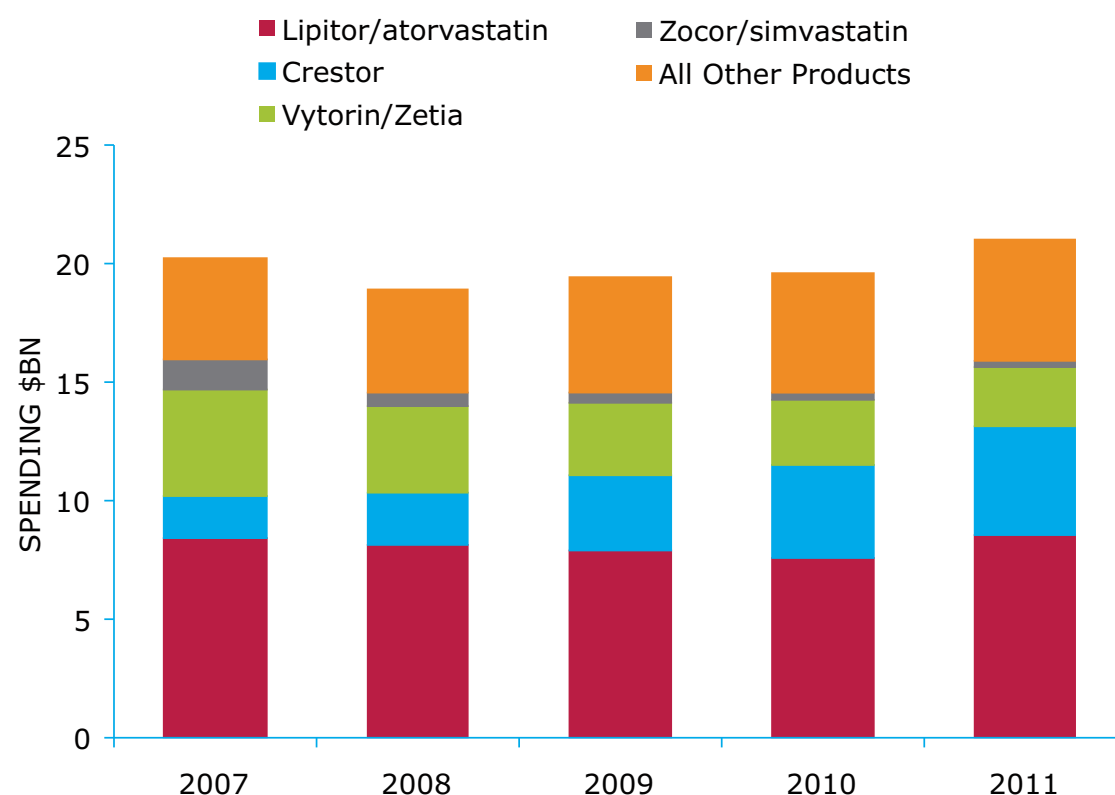
Therapy areas are based on proprietary IMS Health definitions.

Spending growth defined as dollar growth driven by price, volume, new products and mix changes.

COPD – Chronic Obstructive Pulmonary Disease.

# Spending on lipid regulators reached \$20.1Bn in 2011

## Lipid Regulators Spending by Area



Source: IMS Health, National Sales Perspectives, Dec 2011

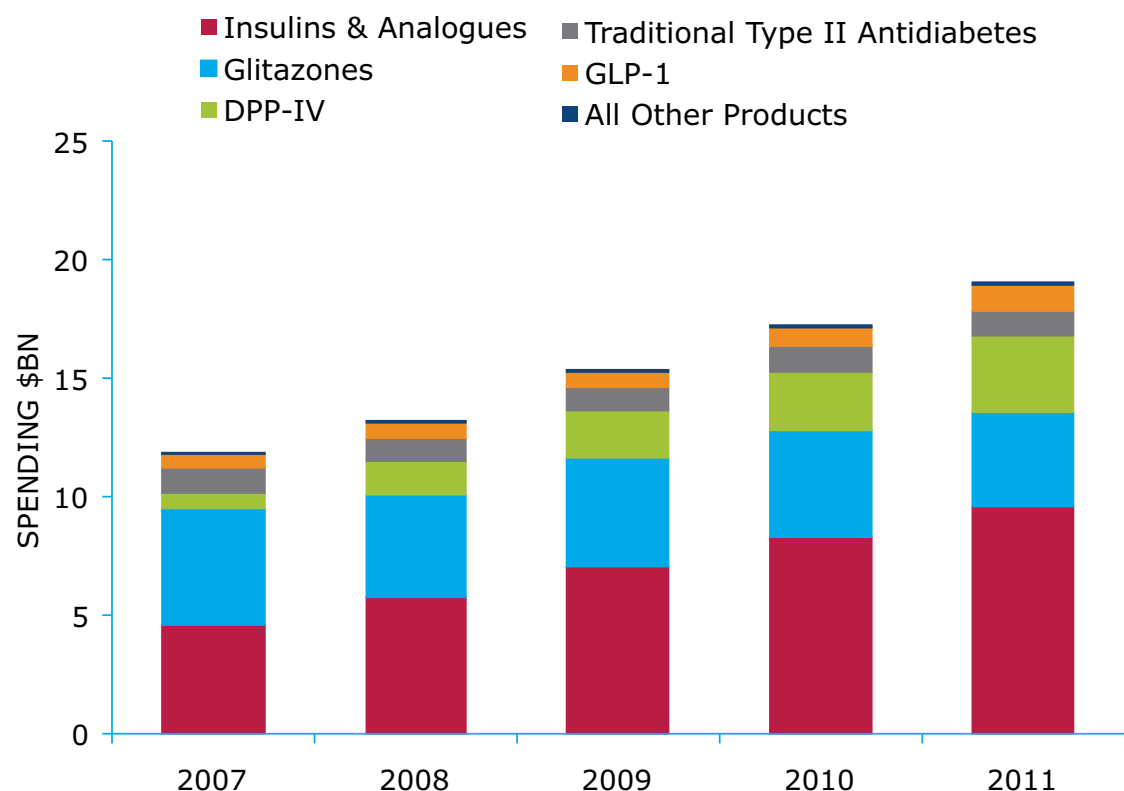
- Lipid regulators were the third largest therapy class by spending in 2011, at \$20.1Bn, growing by \$1.4Bn with the highly anticipated generic availability of atorvastatin in November 2011.
- Nearly 20 million Americans regularly used a cholesterol medicine, and over 3 million are regularly taking atorvastatin.
- Atorvastatin remained the largest source of spending in the class, and grew by 12.8% in the year. On November 30, 2011, generic atorvastatin became available and rapidly captured over 60% of prescriptions for the molecule. Prices can be expected to drop substantially during 2012.
- Dispensed prescriptions for lipid regulators exceeded 260 million in 2011, with 63% filled with a generic; this is expected to rise to over 75% following the Lipitor® patent expiry.

### Chart notes

Therapy areas are based on proprietary IMS Health definitions. Lipid regulators include all cholesterol lowering drugs. Chart shows combined brand and generic for Lipitor®/atorvastatin and Zocor®/simvastatin.

# Increased diabetes spending was driven by insulins and DPP-IVs

## Antidiabetes Spending by Area



Source: IMS Health, National Sales Perspectives, Dec 2011

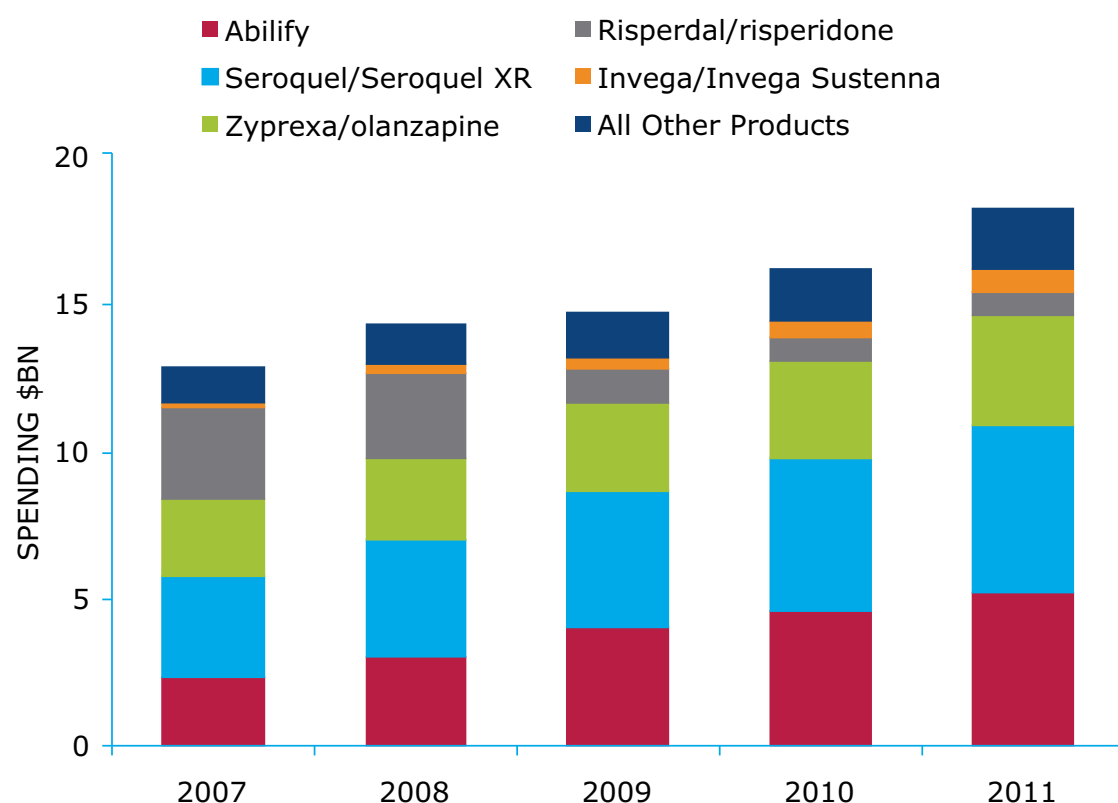
- Diabetes spending reached \$19.6Bn, as growth remained high at \$1.9Bn in 2011, the same as in 2010.
- Patients filled 173Mn prescriptions in 2011, up 0.5% over 2010.
- Much of the spending growth came from widely used human insulins and synthetic analogues which contributed 71% of spending growth (\$1.4Bn) led by insulin glargine.
- DPP-IV therapies contributed steadily to spending growth since their initial introduction in 2007 and included sitagliptin and saxagliptin.
- GLP-1 therapies exenatide and liraglutide together had spending growth of \$336Mn.
- Two glitazone therapies, rosiglitazone and pioglitazone, will become generically available in 2012 and have also seen usage decline due to concerns over cardiovascular complications.

### Chart notes

Therapy areas are based on proprietary IMS Health definitions. All Other Products include multi-therapy combinations and other therapies used in diabetes.

# Antipsychotics spending in 2011 reached \$18.2Bn

## Antipsychotics Spending by Area



Source: IMS Health, National Sales Perspectives, Dec 2011

- Antipsychotic spending reached 18.2Bn growing by \$2.1Bn, in 2011, versus \$1.5Bn in 2010.
- Patients filled 57Mn prescriptions in 2011, up 2.4%, with over 60% filled for branded therapies.
- Aripiprazole (Abilify®) and quetiapine (Seroquel®) were the two leading therapies in 2011, with a combined growth of \$1.1Bn over the previous year.
- With the patent expiry of Zyprexa® (olanzapine) in October 2011, and the July 2008 expiry of Risperdal® (risperidone), two of the new generation atypical antipsychotics are now generically available, with a third, Seroquel® (quetiapine) expected to follow in early 2012.

### Chart notes

Therapy areas are based on proprietary IMS Health definitions.

Includes selected products and follow-on product or generic, where applicable. Zyprexa® spending includes Zyprexa® Zydis®, Relprevv™ and Intramuscular as well as generic olanzapine and olanzapine ODT. Risperdal® spending includes Risperdal® Consta® and M-Tab® as well as generic risperidone.

## Notes on sources

This report is based on the IMS Health services detailed in the panel on the right. Analyses exclude OTC products and focus on prescription-bound products (including insulins which are available without prescription). Spending is reported at wholesaler invoice prices and does not reflect off-invoice discounts and rebates.

### **IMS National Sales Perspectives (NSP)™**

measures spending within the US pharmaceutical market by pharmacies, clinics, hospitals and other healthcare providers. It is the only source to report 100 percent coverage of the retail and non-retail channels for national pharmaceutical sales at actual transaction prices.

**IMS National Prescription Audit (NPA)™** is a suite of services that provides the industry standard source of national prescription activity for all products.

**IMS LifeLink™** provides a broad set of real-world patient metrics derived from clinically rich transactional information on over 260+ million de-identified patients in over 13 countries globally. Within its US assets, LifeLink contains information on over 200 million unique patients and captures longitudinal events across the patient's experience including prescription dispensing, medical encounters, hospital visits, laboratory findings and consumer preferences.

**NPA Market Dynamics (NPA-MD)™** is a national-level prescription offering that links NPA with de-identified patient-level data that tracks patients over time and enables analysis such as whether a patient's prescription was new, switched from another medicine, or added to an existing regimen in the last year. Diagnoses, compliance and persistence, as well as ethnicity analytics are among other analyses that are possible.

### **IMS Formulary Focus™ & Plantrak CoPay™**

are part of the IMS Managed Market Services suite and include tracking of health plan formulary design, link to IMS NPA suite, and measure copayments at the point of sale.

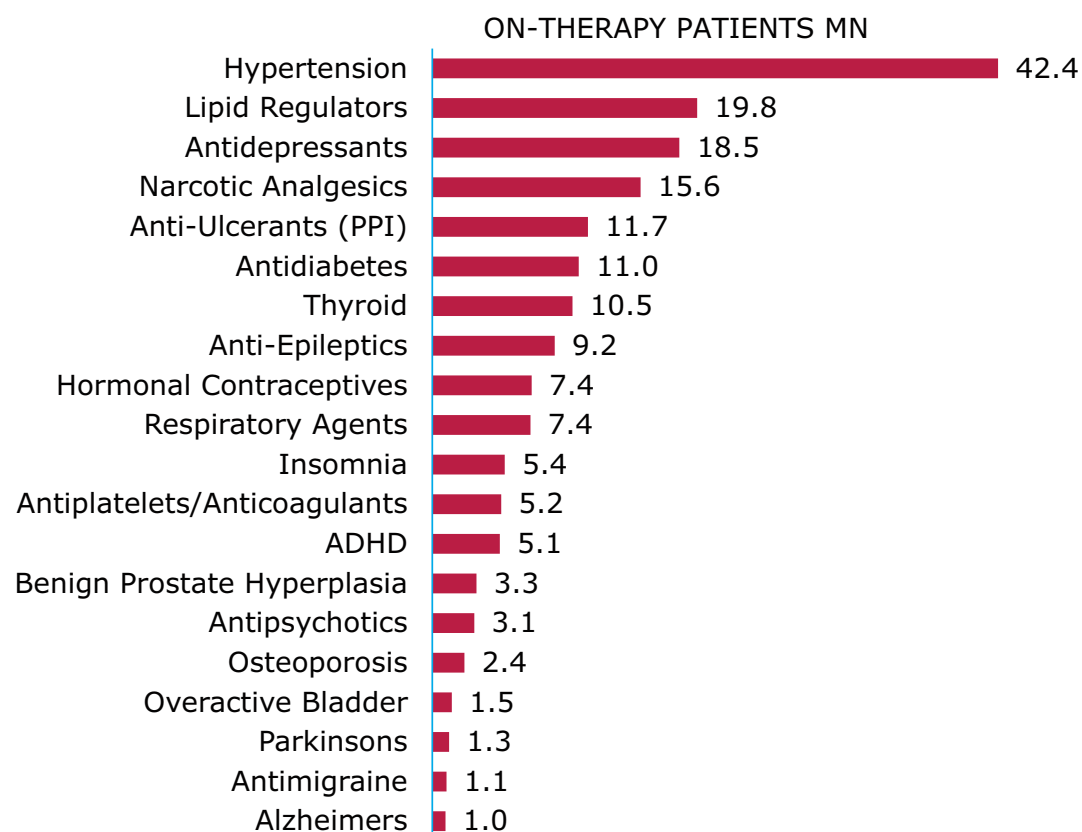
**Vector One®: National (VONA)** projects retail activities of prescriptions linked at a patient level. VONA tracks patient prescription activities by demographic variables including patient gender and patient. It employs True Patient Measures, tracking new therapy starts, continuances, and therapy switching by patients.

**IMS National Disease and Therapeutic Index (NDTI)™** is a database of patient contacts with office-based physicians projected from a panel of physicians in the US who report on all patient contacts for two consecutive workdays each quarter. Information collected includes patient demographics, diagnosis and treatment information, and physician demographics.

**IMS MIDAS™** is an analysis platform used to assess worldwide healthcare markets. It aggregates IMS's global audits and normalizes to international standards of product naming, company ownership, currency exchange rates, volume metrics and product segmentations, and estimates of price levels at different points in the supply chain. Segmentations include therapy classes, forms, dosages, price levels and those related to brands, generics and patent protection.

# On-Therapy Patients – 2011

## Treated Patients in Selected Therapies



Source: IMS Health, LifeLink, Dec 2011

### Appendix notes

On-therapy patients are defined as those who have received a dispensed prescription in prior months and for which the amount of medicine and dosage prescribed has not been exhausted.

This data excludes mail order and long-term care.

Therapy areas are based on proprietary IMS Health definitions.

Patients treated in these 20 leading chronic therapy areas represent 52% of spending and 55% of prescriptions in 2011.

Hypertension includes ace inhibitors, angiotensin II inhibitors, renin inhibitors, beta blockers and calcium channel blockers.

Lipid regulators include all cholesterol lowering drugs.

Antidepressants include SSRIs, SNRIs and newer generation products. Narcotic analgesics include codeine, morphine, propoxyphene and other synthetic narcotics.

Anti-ulcerants is limited to the proton pump inhibitors (PPI).

Antidiabetics includes human insulins & analogues, oral antidiabetics and newer generation diabetes treatments including glitazones, GLP-1 analogues and DPP-IV inhibitor classes.

Thyroid includes natural & synthetic thyroid hormonal preparations.

Anti-epileptics include drugs for seizure disorders, some of which are also used for pain indications.

Respiratory agents include products for asthma & COPD.

Insomnia includes melatonin agonists and other non-barbiturate sleep aids.

Antiplatelets/anticoagulants include oral antiplatelets such as Plavix®, and anticoagulants such as warfarin.

ADHD (Attention Deficit Hyperactivity Disorder) includes medications such as Ritalin® and newer generation psychotherapeutic agents.

Benign prostate hyperplasia (BPH) includes alpha blockers and other agents for benign prostate hyperplasia.

Antipsychotics includes typical and atypical antipsychotics.

Osteoporosis includes biphosphonates, calcitonins, bone density regulators and bone formation agents, but not hormonal therapies.

Overactive bladder includes antispasmodics for urinary incontinence.



# Top Therapeutic Classes by Prescriptions

DISPENSED PRESCRIPTIONS MN	2007	2008	2009	2010	2011
<b>Total US Market</b>	<b>3,825</b>	<b>3,866</b>	<b>3,949</b>	<b>3,993</b>	<b>4,024</b>
1 Antidepressants	237	241	247	254	264
2 Lipid Regulators	233	242	254	260	260
3 Narcotic Analgesics	231	239	241	244	238
4 Antidiabetics	165	166	169	172	173
5 Ace Inhibitors (Plain & Combo)	159	163	166	168	164
6 Beta Blockers (Plain & Combo)	162	164	163	162	161
7 Respiratory Agents	147	147	152	153	153
8 Anti-Ulcerants	134	139	146	147	150
9 Diuretics	137	135	132	131	128
10 Anti-Epileptics	102	110	116	122	128
11 Tranquillizers	98	101	104	108	111
12 Thyroid Preparations	103	104	105	107	110
13 Calcium Antagonists (Plain & Combo)	87	90	93	96	98
14 Antirheumatic Non-Steroid	90	91	92	93	97
15 Hormonal Contraceptives	94	94	93	91	90
16 Angiotensin II Inhibitors	83	86	85	84	86
17 Broad Spectrum Penicillins	77	74	77	76	77
18 Macrolides & Similar Type Antibiotics	63	66	69	67	69
19 Hypnotics & Sedatives	58	60	63	63	63
20 Vitamins & Minerals	60	59	58	58	60

IMS Health, National Prescription Audit, Dec 2011

## Appendix notes

Therapy areas are based on proprietary IMS Health definitions.

Report reflects prescription-bound products including insulins and excluding other products such as OTC.

Includes all prescriptions dispensed through retail pharmacies - including independent and chain drug stores, food store pharmacies and mail order as well as long-term care facilities.

Prescription counts are not adjusted for length of therapy. 90-day and 30-day prescriptions are both counted as one prescription.

Updated February 17, 2012.

# Top Medicines by Prescriptions

DISPENSED PRESCRIPTIONS MN		2007	2008	2009	2010	2011
<b>Total US Market</b>		<b>3,825</b>	<b>3,866</b>	<b>3,949</b>	<b>3,993</b>	<b>4,024</b>
1	Hydrocodone/acetaminophen	120.9	125.5	129.4	132.1	136.7
2	Levothyroxine sodium	97.4	98.9	100.2	103.2	104.7
3	Simvastatin	49.0	68.0	84.1	94.4	96.8
4	Lisinopril	71.5	77.2	83.0	87.6	88.8
5	Amlodipine besylate	40.8	46.0	52.1	57.8	62.5
6	Omeprazole (RX)	27.7	35.8	45.6	53.5	59.4
7	Metformin HCL	49.2	51.6	53.8	57.0	59.1
8	Azithromycin	47.1	51.9	54.7	53.6	56.2
9	Amoxicillin	54.0	51.3	52.9	52.4	53.8
10	Alprazolam	41.4	43.3	45.3	47.7	49.1
11	Hydrochlorothiazide	48.5	48.5	47.9	47.8	48.1
12	Zolpidem tartrate	34.5	39.1	42.7	43.7	44.6
13	Atorvastatin	65.8	58.5	51.7	45.3	43.3
14	Furosemide	44.7	44.4	43.8	43.6	42.3
15	Oxycodone/acetaminophen	31.3	33.6	36.7	37.9	38.8
16	Fluticasone	23.9	26.2	30.1	34.8	38.4
17	Citalopram HBR	18.1	22.6	27.3	32.2	37.8
18	Metoprolol tartrate	43.5	38.4	41.1	38.9	37.8
19	Sertraline HCL	33.4	33.7	34.8	36.2	37.6
20	Metoprolol succinate	33.0	41.5	26.9	33.0	34.5
21	Warfarin sodium	34.4	34.9	35.7	35.6	33.9
22	Tramadol HCL	20.6	23.3	25.5	28.0	33.9
23	Potassium	36.7	35.8	35.2	34.7	33.7
24	Prednisone	25.9	27.1	27.8	28.7	33.7
25	Atenolol	45.0	42.0	39.5	36.4	33.4

IMS Health, National Prescription Audit, Dec 2011

## Appendix notes

Report reflects prescription-bound products including insulins and excluding other products such as OTC.

Table shows leading active-ingredients or ingredient fixed-combinations, and includes those produced by both branded and generic manufacturers.

Includes all prescriptions dispensed through retail pharmacies - including independent and chain drug stores, food store pharmacies and mail order as well as long-term care facilities.

Prescription counts are not adjusted for length of therapy. 90-day and 30-day prescriptions are both counted as one prescription.

Updated February 17, 2012.

# TRx Per 1,000 Population & Growth

STATES	TRx PER 1000	% CHANGE
<b>National</b>	<b>11,331</b>	<b>-1.1%</b>
Below Avg TRx	Per Capita/Above	Avg Growth
ME	10,524	-1.0%
NJ	9,800	2.5%
ID	9,730	-0.5%
NV	9,481	-1.0%
CA	7,646	1.4%
AK	6,882	-0.4%
Below Avg TRx	Per Capita/Below	Avg Growth
OK	11,297	-2.1%
IL	11,235	-2.3%
CT	11,192	-1.1%
FL	11,162	-5.0%
WI	10,390	-5.8%
SD	9,873	-2.6%
OR	9,780	-1.3%
AZ	9,734	-2.6%
UT	9,715	-1.6%
TX	9,667	-1.8%
MT	9,571	-4.4%
MD	9,351	-3.4%
MN	9,168	-4.4%
NH	9,158	-2.8%
VT	9,005	-3.9%
WA	8,904	-1.8%
NM	8,726	-2.9%
WY	8,369	-6.3%
HI	8,360	-4.3%
CO	8,331	-2.4%

STATES	TRx PER 1000	% CHANGE
<b>National</b>	<b>11,331</b>	<b>-1.1%</b>
Above Avg TRx	Per Capita/Above	Avg Growth
WV	19,405	-0.7%
KY	18,319	0.4%
LA	17,425	0.9%
AL	16,746	-0.7%
MS	14,929	-0.9%
DC	14,401	0.1%
PA	13,727	0.7%
OH	13,593	-0.2%
KS	13,237	-0.6%
IN	12,693	-0.7%
NY	11,728	5.6%
VA	11,566	-0.2%
MI	11,456	0.0%
Above Avg TRx	Per Capita/Below	Avg Growth
RI	17,125	-2.6%
TN	16,995	-2.6%
AR	14,133	-7.1%
SC	14,073	-1.3%
MO	13,187	-2.6%
ND	13,156	-6.2%
NC	13,089	-2.3%
GA	12,910	-2.9%
MA	12,585	-1.4%
NE	11,693	-2.5%
IA	11,553	-1.2%
DE	11,401	-3.1%

## Appendix notes

Dispensed prescriptions in retail pharmacies, excluding mail order and long-term care pharmacies.

Report reflects prescription-bound products including insulins and excluding other products such as OTC.

Normalized prescriptions: prescriptions can be of different durations, and this has been shown to vary significantly across states, and to change over time. Increasing numbers of 3-month prescriptions over time result in fewer prescriptions. This analysis adjusts all prescriptions to the national average number of extended units per prescription in 2010 and calculates growth on a consistent prescription size basis.

Updated February 17, 2012.

IMS Health, Xponent, Dec 2011

# Dispensing by Payment Type

DISPENSED PRESCRIPTIONS MN	2007	2008	2009	2010	2011
<b>Total US Prescription Market</b>	<b>3,825</b>	<b>3,866</b>	<b>3,949</b>	<b>3,993</b>	<b>4,024</b>
Cash	415	319	305	274	258
Medicaid	261	273	296	337	326
Commercial Third-Party	2,444	2,489	2,530	2,513	2,547
Medicare Part D	705	785	818	870	893

## Appendix notes

Medicare Part D reflects only retail pharmacy prescriptions. Mail order delivery of Medicare Part D prescriptions is not distinguished from other Commercial Third-Party.

Report reflects prescription-bound products including insulins and excluding other products such as OTC.

Medicaid includes only Fee for Service Medicaid. A number of states transitioned Fee for Service Medicaid programs to commercial administrators, so-called Managed Medicaid. The declines in Medicaid prescriptions, particularly in 2011, were more attributable to this shift in management than to changes in the prescription-filling behavior by Medicaid beneficiaries.

Updated February 17, 2012.

IMS Health, National Prescription Audit, Dec 2011

# Dispensing Locations

<b>SPENDING \$BN</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Total US Prescription Market</b>	<b>280.5</b>	<b>285.7</b>	<b>300.7</b>	<b>308.6</b>	<b>319.9</b>
<b>Retail Channels</b>	<b>199.1</b>	<b>203.5</b>	<b>215.0</b>	<b>219.3</b>	<b>227.3</b>
Chain Stores	96.0	99.7	105.4	108.2	112.6
Mail Service	44.1	46.5	51.0	51.8	55.1
Independent	37.5	36.9	37.4	38.0	38.1
Food Stores	21.5	20.4	21.2	21.3	21.5
<b>Institutional Channels</b>	<b>81.4</b>	<b>82.1</b>	<b>85.7</b>	<b>89.3</b>	<b>92.6</b>
Clinics	32.7	33.0	34.8	36.8	38.4
Non-Federal Hospitals	26.4	26.8	27.6	28.1	28.3
Long-Term Care	13.3	13.7	13.9	14.8	15.2
Federal Facilities	4.0	3.9	4.1	3.9	4.2
Home Health Care	2.5	2.5	2.6	2.6	2.8
HMO	1.5	1.3	1.7	2.1	2.7
Miscellaneous	1.0	1.0	1.0	1.0	1.0

<b>DISPENSED PRESCRIPTIONS MN</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Total US Prescription Market</b>	<b>3,825</b>	<b>3,866</b>	<b>3,949</b>	<b>3,993</b>	<b>4,024</b>
<b>Retail Channels</b>	<b>3,530</b>	<b>3,558</b>	<b>3,633</b>	<b>3,674</b>	<b>3,695</b>
Chain Stores	2,012	2,047	2,129	2,173	2,212
Independent	783	769	755	748	740
Food Stores	478	481	488	489	483
Mail Services	257	261	261	264	260
<b>Institutional Channels</b>	<b>295</b>	<b>307</b>	<b>316</b>	<b>319</b>	<b>329</b>
Long-Term Care	295	307	316	319	329

IMS Health, National Sales Perspectives, Dec 2011

## Appendix notes

Report reflects prescription-bound products including insulins and excluding other products such as OTC.

IMS Health routinely updates its market audits, which may result in changes to previously reported market size and growth rates.

Prescriptions include all prescriptions dispensed through retail pharmacies - including independent and chain drug stores, food store pharmacies and mail order as well as long-term care facilities.

Updated February 17, 2012.

# Top Therapeutic Classes by Spending

SPENDING \$BN	2007	2008	2009	2010	2011
<b>Total US Market</b>	<b>280.5</b>	<b>285.7</b>	<b>300.7</b>	<b>308.6</b>	<b>319.9</b>
1 Oncologics	18.1	19.7	21.5	22.3	23.2
2 Respiratory Agents	15.1	16.0	18.1	19.3	21.0
3 Lipid Regulators	19.4	18.1	18.6	18.8	20.1
4 Antidiabetics	12.2	13.6	15.8	17.7	19.6
5 Antipsychotics	12.8	14.3	14.7	16.2	18.2
6 Autoimmune Diseases	7.6	8.6	9.7	10.6	12.0
7 Antidepressant	11.7	11.7	11.5	11.6	11.0
8 HIV Antivirals	6.2	7.1	8.2	9.3	10.3
9 Anti-Ulcerants	14.6	14.2	14.1	11.9	10.1
10 Narcotic Analgesics	6.7	7.3	8.0	8.4	8.3
11 ADHD	4.0	4.7	5.8	6.7	7.9
12 Platelet Aggregation Inhibitors	5.0	5.7	6.5	7.1	7.8
13 Angiotensin II Inhibitors	6.5	7.6	8.6	8.7	7.6
14 Multiple Sclerosis	3.4	4.1	5.0	5.8	7.1
15 Vaccines (Pure, Comb, Other)	5.9	5.0	4.7	5.7	6.3
16 Anti-Epileptics	10.0	11.1	6.9	5.6	5.9
17 Erythropoietins	4.1	4.5	4.7	4.8	5.2
18 Immunostimulating Agents	8.4	6.9	6.3	6.1	5.1
19 Hormonal Contraceptives	4.1	4.1	4.1	4.2	4.5
20 Antivirals, excl. Anti-HIV	3.6	3.9	4.8	3.2	3.7

IMS Health, National Sales Perspectives, Dec 2011

## Appendix notes

Therapy areas are based on proprietary IMS Health definitions.

Report reflects prescription-bound products including insulins and excluding other products such as OTC.

IMS Health routinely updates its market audits, which may result in changes to previously reported market size and growth rates.

Updated February 17, 2012.



## About the Institute

The IMS Institute for Healthcare Informatics leverages collaborative relationships in the public and private sectors to strengthen the vital role of information in advancing healthcare globally. Its mission is to provide key policy setters and decision makers in the global health sector with unique and transformational insights into healthcare dynamics derived from granular analysis of information.

Fulfilling an essential need within healthcare, the Institute delivers objective, relevant insights and research that accelerate understanding and innovation critical to sound decision making and improved patient care.

With access to IMS's extensive global data assets and analytics, the Institute works in tandem with a broad set of healthcare stakeholders, including government agencies, academic institutions, the life sciences industry and payers, to drive a research agenda dedicated to addressing today's healthcare challenges.

By collaborating on research of common interest, it builds on a long-standing and extensive tradition of using IMS information and expertise to support the advancement of evidence-based healthcare around the world.

## RESEARCH AGENDA

*The research agenda for the Institute centers on five areas considered vital to the advancement of healthcare globally:*

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Demonstrating the effective **use of information** by healthcare stakeholders globally to improve health outcomes, reduce costs and increase access to available treatments.

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Optimizing the **performance of medical care** through better understanding of disease causes, treatment consequences and measures to improve quality and cost of healthcare delivered to patients.

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Understanding the future **global role for biopharmaceuticals**, the dynamics that shape the market and implications for manufacturers, public and private payers, providers, patients, pharmacists and distributors.

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Researching the role of **innovation in health system products, processes and delivery systems**, and the business and policy systems that drive innovation.

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Informing and advancing the healthcare agendas in **developing nations** through information and analysis.

## GUIDING PRINCIPLES

*The Institute operates from a set of Guiding Principles:*

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The advancement of healthcare globally is a vital, continuous process.

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Timely, high-quality and relevant information is critical to sound healthcare decision making.

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Insights gained from information and analysis should be made widely available to healthcare stakeholders.

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Effective use of information is often complex, requiring unique knowledge and expertise.

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The ongoing innovation and reform in all aspects of healthcare require a dynamic approach to understanding the entire healthcare system.

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Personal health information is confidential and patient privacy must be protected.

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The private sector has a valuable role to play in collaborating with the public sector related to the use of healthcare data.

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