New Jersey Spotlight

October 18, 2019

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Pharmaceutical Research & Manufacturers of America (PhRMA)
HEPATITIS C
The leading cause of liver transplants and the reason liver cancer is on the rise – is now curable in more than 90 percent of treated patients.*

CANCER
New therapies have contributed to a 23% decline in the cancer death rate since its peak in 1991. Today, 2 out of 3 people diagnosed with cancer survive at least 5 years.**

HIGH CHOLESTEROL
America’s biopharmaceutical companies are currently developing 190 medicines to treat heart disease, stroke and other cardiovascular diseases. New PCSK9 inhibitors have revolutionized high cholesterol treatment. Between 1991 and 2011, the death rate from heart disease dropped 46%.***

*Source: U.S. Food and Drug Administration.
**Source: American Cancer Society.
***Source: Pharmaceutical Research and Manufacturers of America (PhRMA) and the Association of Black Cardiologists (ABC), "Medicines in Development for Heart Disease and Stroke," December 2015.
Prescription Medicines Are Expected to Account for a Stable Share of Total Health Care Expenditures Through the Next Decade

US Health Care Expenditures Attribute to Retail and Nonretail Prescription Medicines, 2010-2027*

*Retail prescription medicines are those filled at retail pharmacies or through mail service. Nonretail prescription medicines are those purchased through physicians’ offices, clinics, and hospitals and are typically administered to the patient by the provider.

Sources: Altarum Institute10,11
Generics cost a fraction of the price of the initial brand medicine.

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Brand Name THEN</th>
<th>Generic NOW</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIOVAN VCT® Hypertension (2010)</td>
<td>$87</td>
<td>$7</td>
<td>-92%</td>
</tr>
<tr>
<td>LIPITOR® Cholesterol (2010)</td>
<td>$85</td>
<td>$6</td>
<td>-93%</td>
</tr>
<tr>
<td>PLAVIX® Blood Thinner (2011)</td>
<td>$166</td>
<td>$4</td>
<td>-98%</td>
</tr>
<tr>
<td>SEROQUEL® Schizophrenia (2010)</td>
<td>$87</td>
<td>$2</td>
<td>-98%</td>
</tr>
<tr>
<td>ZYPREXA® Schizophrenia &amp; Bipolar Disorder (2010)</td>
<td>$393</td>
<td>$17</td>
<td>-96%</td>
</tr>
</tbody>
</table>

Note: Figures represent the average annual price for 30 pills of the most commonly dispensed form and strength. "Then" price represents the average price in the year prior to generic entry. "Now" price represents the average price in December 2017.
Source: IQVIA Institute for Human Data Science analysis for PhRMA. May 2018.
Pharmacy Benefit Managers (PBMs) and Government Actuaries Report Declining Growth in Medicine Spending

<table>
<thead>
<tr>
<th></th>
<th>CVS Health</th>
<th>Express Scripts</th>
<th>National Health Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>5.0%</td>
<td>5.3%</td>
<td>8.9%</td>
</tr>
<tr>
<td>2018</td>
<td>3.3%</td>
<td>0.4%</td>
<td>3.3%*</td>
</tr>
</tbody>
</table>

*Projected
Additional Information Slides
A Decade of Advances

2008
- New type of treatment for Crohn's disease
- First drug for symptoms of Huntington's disease
- 2 new multiple sclerosis drugs
- First therapeutic cancer vaccine

2010
- First drug to target root cause of cystic fibrosis
- First drug to treat Cushing's disease
- Oral treatments for hepatitis C provide cure rates of more than 90%
- 17 new drugs to treat patients with rare diseases

2012
- First drug to treat spinal muscular atrophy
- New personalized therapy for chronic lymphocytic leukemia
- First drug to treat all 6 forms of hepatitis C

2014
- First drug to treat HIV in patients who failed other therapies
- First new treatment in 10 years to alleviate pain caused by endometriosis
- 3 new drugs to prevent migraines

2016
- First treatment for peripheral T-cell lymphoma
- First new drug for gout in 40 years
- New gene therapies approved

2017
- First drug to treat primary progressive multiple sclerosis
- 16 new drugs to treat cancer

2018
- First lupus drug in 50 years
- 2 new personalized medicines
- 2 new drugs for difficult-to-treat forms of high cholesterol
- New cystic fibrosis drug for patients with a genetic mutation that is the most common cause of the disease

Source: FDA
Developing New Treatments and Cures Is a Complex and Risky Undertaking

On average, it takes more than 10 years and $2.6B to research and develop a new medicine.*

BETWEEN 1998 AND 2014

Unsuccessful Attempts

123 Alzheimer’s Disease**
96 Melanoma***
167 Lung Cancer***

Successful Attempts

4 Alzheimer’s Disease
7 Melanoma
10 Lung Cancer

Just 12% of drug candidates that enter clinical testing are approved for use by patients.

*Source: Tufts Center for the Study of Drug Development (CSDD).
Biopharmaceutical companies use today’s revenues to invest in tomorrow’s treatments and cures.

Invested about $90 Billion in R&D in 2016

And 20% of revenues are reinvested into R&D

Industry invests 17% of all domestic research and development funded by U.S. businesses

Pharmaceuticals & Medicines: 17%
Software: 11%
Automobiles: 6%
Aerospace: 4%
Computer Systems Design: 4%
Scientific R&D Services: 1%

NOTE: The remaining 57% share of business R&D spending is conducted by other industries, including subsectors of the machinery sector, the computer and electronics products sector, and the electrical equipment, appliance, and components sector. Source: Research!America report and PhRMA analysis of National Science Foundation data.
The Biopharmaceutical Industry Invests More R&D Per Employee Than Any Other Industry

Biopharmaceutical Industry Does the Majority of Research to Translate Basic Science Into New Medicines

While science is often initiated in government and academia, it is biopharmaceutical firms that provide the necessary expertise and experience needed to develop new medicines.

$97 Billion
2017 Biopharmaceutical Industry R&D Investment

$32.6 Billion
2017 NIH Research Spending

In addition to basic research and biopharmaceutical research, NIH supports applied research on medical devices, diagnostics, prevention, and other areas.
AHIP Premium Infographic

• AHIP focuses only on the list price of medicines, which does not account for the sizable rebates and discounts paid by biopharmaceutical companies, even though those rebates and discounts significantly reduce the amount that health plans actually spend on medicines.

• Based on patients younger than 65, with lower hospital spend

• AHIP presents its data in a way that overemphasizes the role of prescription medicines, while minimizing the contribution of other sectors.
Competition from generics and biosimilars is expected to reduce U.S. brand sales by $95 billion from 2019 to 2023.

**2014-2018: $72 Billion**

**2019-2023: $105 Billion**

Projected

Insurers and PBMs have a lot of leverage to hold down medicine costs.

Negotiating power is increasingly concentrated among fewer pharmacy benefit managers (PBMs).

Top 3 Market Share:

- OptumRx (UnitedHealthGroup): 24%
- CVS Health (Caremark): 30%
- Express Scripts: 23%
- All Other: 23%

Insurance determine:

- **FORMULARY**: if a medicine is covered
- **TIER PLACEMENT**: patient cost sharing
- **ACCESSIBILITY**: utilization management through prior authorization or fail first
- **PROVIDER INCENTIVES**: preferred treatment guidelines and pathways

Source: Drug Channels Institute, March 2019.
The private sector leads the translation of basic research findings into new medicines

Source: Chakravarthy, R. et al.29
After discounts and rebates, brand medicine prices grew just 0.3% in 2018.

*Includes protected brand medicines only (ie, brand medicines without generic versions available in the year indicated).
**Net price growth reflects impact of off-invoice rebates and discounts provided by manufacturers.
More than 1/3 of the list price is rebated back to payers, the government and other stakeholders in the supply chain.

Brand companies retain just 63% of list price spending on medicines.

Rebates, discounts, fees and other price concessions have more than doubled since 2012.

Source: Berkeley Research Group, Fein AJ, Drug Channels Institute
Spending on retail and physician-administered medicines continues to represent just 14% of spending...

U.S. Health Care Spending, 2015

- Admin Costs: 8%
- Home Health & Nursing Home Care: 12%
- Prescription Medicines: 14%
- Physician & Clinical Services: 18%
- Other**: 13%
- Dental Services
- Hospital Care

Source: PhRMA analysis of CMS National Health Expenditures data, Altarum Institute study and Berkley Research Group study.

**Supply chain entities - stakeholders involved in bringing medicines from manufacturer to patient, including wholesalers, pharmacies, PBMs and healthcare provider locations.
Cost sharing for nearly 1 in 5 brand prescriptions is based on list price.

More than half of commercially insured patients’ out-of-pocket spending for brand medicines is based on the full list price.

- **Copay:** 44%
- **Deductible:** 29%
- **Coinsurance:** 26%

Source: IQVIA, May 2018.
UnitedHealthcare Says It Will Pass On Rebates From Drug Companies to Consumers

“In response to growing consumer frustration over drug prices, UnitedHealthcare, one of the nation’s largest health insurers, said on Tuesday that it would stop keeping millions of dollars in discounts it gets from drug companies and share them with its consumers.”
Sharing negotiated discounts with patients would increase premiums about 1%.

Certain commercially insured patients could save $145 to more than $800 annually.

<table>
<thead>
<tr>
<th>PLAN TYPE</th>
<th>Traditional PPO</th>
<th>Copay HDHP*</th>
<th>Coinsurance HDHP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Plan Per Member Per Month Spend</td>
<td>$433.91</td>
<td>$374.41</td>
<td>$372.89</td>
</tr>
<tr>
<td>Change in Plan Costs $</td>
<td>$0.82</td>
<td>$2.62</td>
<td>$3.84</td>
</tr>
<tr>
<td>Change in Plan Costs %</td>
<td>0.2%</td>
<td>0.7%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

NOTE: Plan cost includes medical and pharmacy claims.
*HDHP = High-deductible health plan.