Pharmaceutical Marketplace Dynamics

Expenditures, Distribution, Coverage, Pricing

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National Association of Chain Drug Stores

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Topics

- What are prescription drug expenditures among the various purchasers, and what factors are driving spending?
- How are prescription drugs purchased and distributed?
- Who pays for prescription drugs?
- How are prescription drugs priced?

Pharmacy Economics 101
Pharmaceutical Expenditures and Factors Driving Spending
Forecast of Rx Dollar Growth
US Pharmaceutical Market ($ Bill.)

Compounded Growth = 13.3%
Manufacturers’ Sales of Prescription Drugs = $121.7 Billion

1999

This Market Grew 19.3% as Compared to 1998
# U.S. Prescription Drug Market Surpassed $127 Billion in 1999

## Manufacturer Sales

### Prescription Pharmaceuticals - Billions

<table>
<thead>
<tr>
<th>Channel</th>
<th>1999</th>
<th>%</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prescription Channels</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chains</td>
<td>37.1</td>
<td>30.5</td>
<td>+22</td>
</tr>
<tr>
<td>Independents</td>
<td>22.2</td>
<td>18.3</td>
<td>+15</td>
</tr>
<tr>
<td>Mail Order</td>
<td>13.6</td>
<td>11.2</td>
<td>+23</td>
</tr>
<tr>
<td>Food Stores</td>
<td>10.0</td>
<td>8.3</td>
<td>+20</td>
</tr>
<tr>
<td>Mass Merchandisers</td>
<td>8.9</td>
<td>7.3</td>
<td>+18</td>
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<tr>
<td><strong>Institutional Channels</strong></td>
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<td></td>
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<tr>
<td>Hospitals</td>
<td>12.6</td>
<td>12.4</td>
<td>+16</td>
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<tr>
<td>Clinics</td>
<td>7.7</td>
<td>6.7</td>
<td>+27</td>
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<tr>
<td>Long Term Care/HH</td>
<td>3.3</td>
<td>4.0</td>
<td>+17</td>
</tr>
<tr>
<td>HMO’s (Staff Model)</td>
<td>1.4</td>
<td>1.2</td>
<td>-4</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.3</td>
<td>0.3</td>
<td>-10</td>
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<tr>
<td><strong>Grand Total</strong></td>
<td>127.1</td>
<td>100.0</td>
<td>+19</td>
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Source: Data on File

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Factors Influencing Prescription Sales Increases

% Growth Rate

<table>
<thead>
<tr>
<th>Year</th>
<th>Price</th>
<th>New Elements</th>
<th>Volume &amp; Mix</th>
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<tbody>
<tr>
<td>1990</td>
<td>8.4</td>
<td>-0.5</td>
<td>1.4</td>
</tr>
<tr>
<td>1991</td>
<td>7.2</td>
<td>2.7</td>
<td>4.0</td>
</tr>
<tr>
<td>1992</td>
<td>5.9</td>
<td>3.5</td>
<td>2.7</td>
</tr>
<tr>
<td>1993</td>
<td>3.3</td>
<td>1.9</td>
<td>2.8</td>
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<tr>
<td>1994</td>
<td>2.8</td>
<td>3.6</td>
<td>3.6</td>
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<td>1995</td>
<td>2.8</td>
<td>5.0</td>
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<td>1996</td>
<td>1.9</td>
<td>4.5</td>
<td>6.7</td>
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<td>1997</td>
<td>1.6</td>
<td>5.0</td>
<td>10.0</td>
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<td>1998</td>
<td>3.0</td>
<td>3.0</td>
<td>4.0</td>
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<tr>
<td>1999</td>
<td>4.0</td>
<td>4.0</td>
<td>11.0</td>
</tr>
</tbody>
</table>

IMS Health, Retail & Provider Perspective™, July 1999
Medicare beneficiaries with coverage fill one-third more Rxs than uninsured.

Total expenditures on drugs in 1996 were 40% lower among Medicare beneficiaries without drug coverage compared to those with drug coverage—$463 vs. $769.

Uninsured poor spent 46% of what insured poor spent.

- As health status declined, the use and spending gaps between insured and noninsured widened.

Average Number of Prescriptions Filled by Medicare Beneficiaries (by coverage status in 1996)

Note: ADL = Activity of Daily Living
Source: Poisal, J.A. and Chulis, G.S., Health Affairs, March/April 2000
Elderly Population Is Increasing

[Graph showing the increase in population of different age groups (65-84, 85-99, 100+) from 1990 to 2050, with a clear upward trend.]
Top Therapeutic Classes of Drugs
(% sales)

- CNS drugs 22%
- Cardiovascular 18%
- Cancer 18%
- Anti-infective 15%
- Digestive/GI 13%
- TOTAL 86%

Source: IMS Health
Pharmaceutical Distribution System
Pharmaceutical Distribution System

Manufacturer  *(brand and generic)*

Wholesaler  *(prime vendors)*

Pharmacies  *(retail, hospital, LTC, physician office, clinics, pharmaceutical buying groups, etc.)*

Customer/Patient

Payor/Insurance Company
Pharmaceutical Distribution System

“chargebacks”

Manufacturer (AWP)

Wholesaler (Prime Vendors)

Pharmaceutical Purchasers (Buying Groups)

Managed Care (Staff Models)

Retail (Chains/Independents)

Mail Order/Internet

Cash Customers

Hospitals/Institutional Settings

Managed Care/PBMs (PPO, IPA, Self Insured)

Federal/State
• VA
• DOD
• PHS
• ADAP
• Medicaid (statutory rebates)

Negotiate discounted fees from pharmacists and rebates from drug manufacturers
Pharmaceutical Pricing Terminology

◆ AWP (Average Wholesale Price)
  - *manufacturer-reported list price “benchmark,” based on surveys of wholesalers done by database companies:*
    - basis for reimbursement to pharmacies under third party programs, including Medicare and Medicaid, (plus a dispensing fee)
    - only publicly-available mfgr price in the marketplace

◆ AMP (Average Manufacturers Price)
  - *created to calculate Medicaid rebate*
  - *approximates the actual revenue received by manufacturer*
Pharmaceutical Wholesalers

- Act as “middlemen” and “prime vendors” in distribution system.
  - Operate on slim profit margins

- Execute “chargebacks” with manufacturers.

- 5 major pharmaceutical wholesalers have about 80% of the marketplace:
  - McKesson $21 billion
  - Bergen Brunswig $17 billion
  - Cardinal $15 billion
  - Amerisource $ 9 billion
  - Bindley Western $ 8 billion

Source: NWDA Industry Profile, 1998
Distribution of Retail Pharmacies

1999 = 51345
Pharmacy Buying Groups

◆ Help to pool the purchasing power of independent retail pharmacies/ small chains / hospitals for pharmaceuticals, OTCs, and other pharmacy items

◆ May have own “brand” of OTC items

◆ Examples:
  – EPIC Pharmacies
  – PACE Alliance
  – Legend Pharmacies of Greater New York
  – Premier
“Internet” Pharmacies

◆ Different Types

- traditional “bricks and mortar” pharmacies with internet connections
  • (e.g. CVS.com, Walgreens.com, CornerDrugStore.com)

- mail order pharmacies with the internet as the primary method of ordering Rxs
  • (e.g. DrugStore.com, PlanetRx.com)

- “rogue sites” that allow ordering Rxs through online assessment and Rx fulfillment from domestic and foreign pharmacies
Prescription Coverage and Payment Sources
Payment Method for Retail Prescriptions

Source: IMS Health
Pharmacy Gross Margins Declining

Source: IMS Health and NACDS Data
Role of PBMs

- **Evolved from Rx claims administrators**
  - "Contract with employers, unions, health plans to administer and manage Rx benefit"
  - "consolidating industry"

- **Perform certain management functions**
  - "adjudicate claims on line"
  - "negotiate discounts with retail pharmacies and rebates with drug manufacturers"
  - "encourage generic drug use"
  - "provide information to pharmacists for patient management and quality improvement"
  - "how appropriate for Medicare population?"
<table>
<thead>
<tr>
<th>Company</th>
<th>Rx Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merck-Medco</td>
<td>252 million</td>
</tr>
<tr>
<td>PCS Health Systems</td>
<td>252 million</td>
</tr>
<tr>
<td>Express Scripts</td>
<td>196 million</td>
</tr>
<tr>
<td>Wellpoint</td>
<td>45 million</td>
</tr>
<tr>
<td>Advance Paradigm</td>
<td>35 million</td>
</tr>
<tr>
<td>Caremark</td>
<td>34 million</td>
</tr>
<tr>
<td>Aetna</td>
<td>30 million</td>
</tr>
<tr>
<td>NPA</td>
<td>28 million</td>
</tr>
<tr>
<td>Preferred Solutions</td>
<td>26 million</td>
</tr>
<tr>
<td>Provantage</td>
<td>20 million</td>
</tr>
</tbody>
</table>
Pharmaceutical Pricing
Each type of prescription drug generally has its own pricing pattern:

- *Patented Single Source Innovative Drug with no therapeutic competitors*
- *Patented Single Source Innovative Drug with therapeutic competitors*
- *Patented “Line Extension”*
- *Off patent brand name drug*
- *Multisource generic pharmaceuticals*
Manufacturing Discounting

◆ Brand manufacturers generally discount to purchasers who move “marketshare” for therapeutic alternates
  – *certain settings have tighter control over pharmaceutical use through drug formularies*
  – *chains and independent retail pharmacies have traditionally purchased pharmaceuticals at relatively the same prices*
    • no reason for manufacturer to discount if retail pharmacy has to dispense the product as written by physician
    • BUT… pharmacists do much of the marketshare movement work for PBMs
Retail Prescription Cost Components

Source: IMS HEALTH, Hoover’s Company Information, PhRMA, Retail Census, U.S. Bureau of the Census; average prescription price $43.06, 3rd quarter 1999.
Summary

- Complex, growing, increasingly-concentrated market at all levels with a multitude of transactions

- Retail Rxs primarily paid for by third parties, i.e. PBMs - likely to increase with Medicare coverage

- Managed care, DTC advertising, elderly population, new drug replacement prices driving Rx expenditures