Spending More on Pharmaceuticals: Good News, Bad News or the Wrong Question

Robert W. Dubois, MD, PhD  November 17, 2000
Protocare Sciences
Outline: Pharmaceutical Spending

1. How much growth has occurred?
2. What could cause growth?
3. Is it price or volume?
4. Is the volume appropriate?
5. Is spending growth bad news or good news?
6. Are we asking the right question?
Prescription Drug Spending

Billion ($)

1970 (7.5%*)
1980 (4.9%*)
1990 (5.4%*)
1999 (8.2%*)

101

*Percentage of health expenditures

Do Rising Drug Costs Explain The Increase in Privately Covered Medical Costs?

Drug Cost Increase 13.8%

Drug Component of Health Care x 12.4%

1.7% of Total Increase (6%) Due to Drugs

Proportion of Increase Due to RX

28% Drugs

72% Other
Conceptual Model for Growth in Drug Expenditures

Demographic Changes

- Multiple medical problems
- Disease Progression
Conceptual Model for Growth in Drug Expenditures

"Prevalence" (or patient volume)
Conceptual Model for Growth in Drug Expenditures

Changes in Drug Mix
Conceptual Model for Growth in Drug Expenditures

Quantity

“Use PRN”

Rx1
March 1
Rx2
Sept. 1

Change in Days Supply
“Use Daily”

Rx1
March 1
Rx2
Sept. 1

Change in Scripts/Pt. - Year
“Use on Chronic Basis”

Rx1
March 1
Rx2
April 1
Rx3
May 1
Rx4
June 1
Conceptual Model for Growth in Drug Expenditures

New Products

- $3,000
- $40,000

- Reliability
- Crash Survivability
- Comfort
- Smog Emission
Conceptual Model for Growth in Drug Expenditures

Price Inflation

$2

$3
Study Methodology

- Performed by Protocare Sciences and Medstat
- Data from health plans and employers
- Controlled for changes in population
- Examined actual expenditures
  - Pharmacy charge (co-pay, Plan benefit)
Disease/Class specific analysis
- Anti-diabetics
- Anti-depressants
- Anti-lipidemics
- Gastrointestinal drugs
- Hormone replacement therapy
- Anti-histamines
- Asthma

50% of Total Rx Dollars
Examples from Key Diseases and Drug Classes
All Diseases

3 Year Growth

<table>
<thead>
<tr>
<th>Disease</th>
<th>Volume</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-depressants</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>Anti-diabetics</td>
<td>94%</td>
<td></td>
</tr>
<tr>
<td>Anti-histamines</td>
<td>67%</td>
<td></td>
</tr>
<tr>
<td>Antihyperlipidemics</td>
<td>126%</td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td>94%</td>
<td></td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>43%</td>
<td></td>
</tr>
<tr>
<td>Hormone Replacement Therapy</td>
<td>156%</td>
<td>63%</td>
</tr>
</tbody>
</table>
Factors Responsible for Growth in Antihyperlipidemics 1997-1999

Price Factors
- Per Eligible
- Inflation
- Mix of Established Products
- Prices of New Entrants
- Established Products
- New Entrants
- Established Drugs
- New Entrants
- Prevalence

Volume Factors
- Rxs per Person
- Days of Therapy per Rx

Source: Medstat
# Changes in Lipid Care*

<table>
<thead>
<tr>
<th>New Science</th>
<th>Lipid reduction can stop progression and may reduce atherosclerosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Practice</td>
<td>Routine lipid screening</td>
</tr>
<tr>
<td></td>
<td>Ease of statin use improves compliance</td>
</tr>
<tr>
<td>More Patients</td>
<td>✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Result of screening</td>
</tr>
<tr>
<td></td>
<td>Patient awareness</td>
</tr>
</tbody>
</table>

*1997 vs. 1999 (66,270 patients in ‘99)
Growth in Hormone Replacement Therapy
1995-1998

- Volume Factors
- Price Factors
- Per Eligible
- Inflation
- Mix of Established Products
- Prices of New Entrants
- Established Products
- New Entrants
- Established Drugs
- New Entrants
- Prevalence

Price Factors

Volume Factors

Rxs per Person

Days of Therapy per Rx

01100-nw
Dubois
Factors Responsible for Growth in all Asthma-Related Therapy 1995-1998

- **Price Factors**
  - Per Eligible
  - Inflation
  - Mix of Established Products
  - Prices of New Entrants
  - Established Products
  - Rxs per Person

- **Volume Factors**
  - New Entrants
  - Established Drugs
  - Days of Therapy per Rx
  - Prevalence

**Price Factors**

**Volume Factors**
Appropriateness of Lipid Therapy

**Hierarchy**

1. Prior “event” (MI, CABS/PTCA)
2. Vascular Disease (Angina, PVD, CVD)
3. Diabetes or Multiple Risk Factors
4. Single Risk Factor
5. Hypercholesterolemia
6. No Reason

2° Prevention
1° Prevention
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Hypothesis: Are the increases in volume due to more patients receiving more prescriptions for appropriate/high value situations?

Pre-DTC

Appropriate

Inappropriate

Post-DTC

Appropriate

Inappropriate
Utilization of Inhaled Corticosteroids

% Patients

Number of Canister Claims per Patient

Source: Protocare Sciences
Asthma Related Hospital and ER Use

# per 1,000

ER ($430 each)  Hospitalizations ($11,037 each)

1995:
- ER: 424
- Hospitalizations: 163

1998:
- ER: 393
- Hospitalizations: 128

Source: Protocare Sciences
Cost Savings

Per Patient ($)

Cost

Savings

$224

$399

Rx Increase

Savings (ER/hosp)

Source: Protocare Sciences
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Market Responses to Rising Volume

- Be happy?

- Administrative
  - more excluded drugs
  - defined benefit ($1000/year)
  - higher co-pays
  - prior authorization for chronic therapies