Managing Biopharmaceuticals in the U.S.
Public Policy and Market Strategy

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OVERVIEW

- Public policy: Congress and Obama Administration
- Challenges to biopharmaceuticals in the US
- Small biotechnology firms
- Large biotechnology firms
- Market strategies for biotechnology and insurers
  - Immunology example: Rheumatoid arthritis
- Appropriate utilization
  - Care management, companion diagnostics
  - Benefit design and consumer cost sharing
- Distribution and physician practice economics
- Performance-based pricing
Public Policy: Replacement of Market Forces

- Expansion of public insurance plans
  - Federal support for increased enrollment in state plans
  - New proposed national public insurance plan
- Drug purchasing by public insurance plans
  - Mandatory discounts and rebates
- Cutting public payments for private plans
  - Encouraging Medicare enrollment to shift from private (Medicare Advantage) to public Medicare plan
Public Policy: Support for Market Forces

- Comparative effectiveness research
  - Therapies are equivalent until proven non-equivalent, or non-equivalent until proven equivalent?
  - Biologics as obvious candidates for testing
    - Lucentis and Avastin
    - Biologic therapies for rheumatoid arthritis, MS
- Regulatory pathway for biosimilars
  - Following the lead of the EU
  - Effects will be only long-term, not short-term, except for EPO, growth hormone, and a few others
- Continued support for employment-based insurance
Challenges to Biotechnology: Small Firms

- How to obtain continued financial investments:
  - Long pathway to product revenues
  - Retreat by venture capitalists (50% decline in 1Q09)
  - IPO window closed
  - Credit markets closed for debt financing
- Very low valuations: many valued at less than cash
- Acquisitions by larger biotech and by pharma
  - Large pharma is cash rich
  - Europharma has (had) strong(er) Euro
  - Acquisitions preferred over licensing
- Reverse merger or unwinding
- Overall: very widespread concerns over pipeline
Challenges to biotechnology: Large firms

- Some have strong product revenues (high prices, indication spread for oncology, immunology)
- Valuations mostly down, making them attractive acquisition targets: Genentech, Wyeth, Imclone
- Major challenge is from payers
  - Government
  - Consumers
  - Private insurers
- All these focus on unit prices, utilization, and expenditures (revenues) for biopharmaceuticals
- Huge pressure to reduce expenditures
- Most important are the private insurers
Market Strategies: Biopharma and Insurers

- Are manufacturers and insurers engaged in a zero sum game in the market?
  - Zero sum: your gain is my loss, and vice versa.
  - Manufacturers favor premium pricing, extended patent protection, coverage without restrictions, no financial barriers for patients, favorable reimbursement for physician practices
  - Insurers favor commodity pricing, biosimilars, prior authorization, consumer cost sharing, reduced payments for distribution through physician practices
- Can this be changed to a positive sum game?
  - We both gain overall from playing, even if our interests diverge at times (zero sum sub-games)
A Positive Sum Game: Immunology

1. Enhancing appropriate utilization
   – Prior authorization and early intervention
   – Care management: safety monitoring and patient education

2. Benefit design and consumer cost sharing
   – Tiered formulary for specialty drugs

3. Distribution and physician practice economics
   – Specialty pharmacy and buy-and-bill

4. Performance-based pricing
Top RA Drugs Utilized Based on Paid Service Date between 7/1/2006 – 6/30/2008

<table>
<thead>
<tr>
<th>Drug</th>
<th>Paid</th>
<th>% of Paid</th>
<th>Mbrs</th>
<th>% of Mbrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMICADE</td>
<td>$89,736,667</td>
<td>32.4%</td>
<td>2861</td>
<td>12.8%</td>
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<tr>
<td>ENBREL</td>
<td>$85,261,154</td>
<td>30.8%</td>
<td>4172</td>
<td>18.7%</td>
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<tr>
<td>HUMIRA</td>
<td>$61,731,384</td>
<td>22.3%</td>
<td>2987</td>
<td>13.4%</td>
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<tr>
<td>ORENCIA</td>
<td>$11,423,856</td>
<td>4.1%</td>
<td>831</td>
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<tr>
<td>RITUXAN</td>
<td>$10,818,816</td>
<td>3.9%</td>
<td>528</td>
<td>2.4%</td>
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<tr>
<td>CELEBREX</td>
<td>$4,015,979</td>
<td>1.5%</td>
<td>3055</td>
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<tr>
<td>METHOTREXATE</td>
<td>$3,213,967</td>
<td>1.2%</td>
<td>12283</td>
<td>55.1%</td>
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<tr>
<td>LEFLUNOMIDE</td>
<td>$2,766,610</td>
<td>1.0%</td>
<td>2532</td>
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<tr>
<td>HYDROXYCHLOROQUINE</td>
<td>$1,381,051</td>
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<td>5627</td>
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<tr>
<td>KINERET</td>
<td>$990,552</td>
<td>0.4%</td>
<td>71</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

RA Drug Spend by Drug Type

- dmaid-bio, 94.0%
- dmaid-nb, 3.3%
- nsaid, 2.4%
- steroid, 0.3%
- Other, 2.7%
Highest-Priority Therapy Categories

On a scale from 1 to 5, where 1=lowest priority and 5=highest priority, rate the priority to manage each drug category.

<table>
<thead>
<tr>
<th>Therapy Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rheumatoid Arthritis</td>
<td>4.17</td>
</tr>
<tr>
<td>Growth Hormones</td>
<td>3.72</td>
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<tr>
<td>Psoriasis</td>
<td>3.67</td>
</tr>
<tr>
<td>Respiratory Syncytial Virus</td>
<td>3.58</td>
</tr>
<tr>
<td>Hepatitis C</td>
<td>3.55</td>
</tr>
<tr>
<td>Blood Cell Stimulants</td>
<td>3.52</td>
</tr>
<tr>
<td>Oncology (Oral)</td>
<td>3.49</td>
</tr>
<tr>
<td>Asthma</td>
<td>3.43</td>
</tr>
<tr>
<td>Multiple Sclerosis</td>
<td>3.42</td>
</tr>
</tbody>
</table>

Mean = 3.34
Enhancing Appropriate Utilization: Patient Identification

- The basic trade: manufacturers agree to help insurers contain use within evidence-based appropriateness, while insurers agree to help manufacturers identify patients who would benefit but are currently not on drug

- Cooperation on guidelines for appropriate use
  - FDA label, off-label: prior authorization
  - Severity: step therapy v. early intervention
  - Leapfrog over step therapy for early responders

- Companion diagnostic for early identification of patients who would benefit from treatment?
Prior Authorization Required by Drug Category

Indicate which of the following therapeutic classes/products require PA for coverage under each benefit.

- **Growth Hormones**: 94% (Pharmacy) 84% (Medical)
- **Psoriasis (SC)**: 81% (Pharmacy) 79% (Medical)
- **Rheumatoid Arthritis (SC)**: 69% (Pharmacy) 64% (Medical)
- **Hepatitis C**: 93% (Pharmacy) 90% (Medical)
- **Oncology (Oral)**: 84% (Pharmacy) 81% (Medical)
- **Asthma**: 79% (Pharmacy) 70% (Medical)

**Drug Category**

**Compare and Contrast**
Compared to the 2007 data, the 2008 survey data identified:
- Higher use of prior authorization for psoriasis and lower use of prior authorization for self-administered multiple sclerosis therapies.
Prior Authorization for RA in Private Insurance

- Criteria for coverage and payment to physicians and pharmacy
  - Diagnosis of RA made by specialists, not physician generalist
  - Drug authorization for RA (on-label use)
  - Step therapy: patient must have failed on 6 month of MTX + NSAIDs
  - During that time period, patient must have:
    - No decrease in number of swollen or painful joints,
    - No decrease in pain or disability,
    - No improvement in global assessment that includes patient activity/functional assessment, OR
    - Radiographic evidence of disease progression
  - OR patient cannot tolerate MTX due to documented side effects
Enhancing Appropriate Utilization: 
Care Management

- All patients using high-cost and potentially toxic biologics should be in care management (CM)
- The basic trade: Insurers agree that a major goal of CM is to maintain continuance of therapy (as is often appropriate) by resolving financial barriers, adverse effects, convenience problems.
- Manufacturers agree that goals of CM also include safety monitoring, identifying patients who should discontinue therapy.
Accordant DM program

What Can Members Expect from the Accordant Program?

- Introductory illness-specific phone call from AHS nurse
- Quarterly condition-specific assessment calls
- A personal Disease Management nurse
- Individualized interventions and condition-specific education
- Assistance with coordination of care and resource needs
- Physician (PCP and specialist) notification/education
- Identity reminders on general wellness and condition-specific topics (alternating monthly) and other educational material as needed
- Access to disease-specific communities at www.accendant.com
- 24/7 access to nurse specialists

Disease Management Intervention Strategies

- Promote Better Self Management Skills
  - Access, Education, Communication, Compliance
- Prevent Disease Complications
  - Risk Stratify, Access, Monitor, Examine
- Promote Drug Safety
  - Education, Monitoring, Compliance, Interventional/Contraindications
- Enhance Participant’s Ability to Cope
  - Psychosocial, Advance Directives, Community Resources
- Provide “Stay Healthy” Behaviors
  - Wellness/Prevention
- Provide Care Coordination
Benefit Design: Cost Sharing

- Consumers must be conscious of the cost of care, and cost sharing can guide appropriate choices.
- But some patients avoid effective and cost-effective treatments due to cost-sharing.
- “Value-based insurance design” (VBID) shifts cost-effective drugs to “tier” with lower cost sharing.
- VBID for immunology biologics?
  - Complications: benefit design and cost share differ between office administered infused drugs (e.g., Remicade, Rituxan) v. self-administered injected drugs (e.g., Enbrel, Humira)
Benefit Coverage of Specialty Pharmaceuticals by Drug Category

Indicate the benefit under which each drug is typically covered for your most common benefit structure.

Drug Category

- Pulmonary Arterial Hypertension (Oral)
- Oncology (Oral)
- Multiple Sclerosis (IM, SC)
- Rheumatoid Arthritis (SC)
- Growth Hormone
- Hepatitis C
- Psoriasis (SC)
- Fertility
- Erythropoiesis-Stimulating Agents
- Granulocyte Macrophage Colony-Stimulating Factor
- Psoriasis (IM)
- Asthma
- Respiratory Syncytial Virus
- Hemophilia Factor
- Ophthalmology
- Pulmonary Arterial Hypertension (IV)
- Lysosomal Storage Diseases
- Immunoglobulin
- Multiple Sclerosis (IV)
- Rheumatoid Arthritis (IV)
- Oncology (IV)
Pharmacy and Medical Benefit Cost Share Methods

Describe the most common share methodology for specialty drugs covered under each line of business.

- **Commercial Pharmacy Benefit**
  - No cost share: 2%
  - Flat cost share: 46%
  - Tiered cost share: 53%

- **MA-PD Pharmacy Benefit**
  - No cost share: 2%
  - Flat cost share: 72%
  - Tiered cost share: 26%

- **Commercial Medical Benefit**
  - No cost share: 70%
  - Flat cost share: 25%
  - Tiered cost share: 5%

- **MA-PD Medical Benefit**
  - No cost share: 64%
  - Flat cost share: 32%
  - Tiered cost share: 4%
# Employer Trends 2000-2008

## Among Covered Workers with Three, Four, or More Tiers of Prescription Cost Sharing, Average Copayments and Average Coinsurance, 2000–2008

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<tbody>
<tr>
<td><strong>Average Copayments</strong></td>
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<tr>
<td>Third-Tier Drugs, Often Called Nonpreferred</td>
<td>$29</td>
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<td>$40*</td>
<td>$43*</td>
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<td>$46*</td>
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<tr>
<td>Fourth-Tier Drugs</td>
<td>^</td>
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<td>^</td>
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<td>$59</td>
<td>$74</td>
<td>$59</td>
<td>$71*</td>
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<tr>
<td><strong>Average Coinsurance</strong></td>
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<tr>
<td>First-Tier Drugs, Often Called Generic</td>
<td>18%</td>
<td>18%</td>
<td>18%</td>
<td>18%</td>
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<td>27%</td>
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<td>26%</td>
<td>25%</td>
</tr>
<tr>
<td>Third-Tier Drugs, Often Called Nonpreferred</td>
<td>28%</td>
<td>33%</td>
<td>40%</td>
<td>34%*</td>
<td>34%</td>
<td>38%</td>
<td>38%</td>
<td>40%</td>
<td>38%</td>
</tr>
<tr>
<td>Fourth-Tier Drugs</td>
<td>^</td>
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<td>^</td>
<td>^</td>
<td>30%</td>
<td>43%*</td>
<td>42%</td>
<td>36%</td>
<td>28%</td>
</tr>
</tbody>
</table>


* Estimate is statistically different from estimate for the previous year shown (p<.05).

^ Fourth-tier drug copayment or coinsurance information was not obtained prior to 2004.

NSD: Not Sufficient Data.
Consumer Cost Sharing: The Basic Trade

- Insurer places a drug in tier with minimal cost sharing if:
  - The patient is an appropriate candidate (according to coverage criteria, prior authorization, companion diagnostic), \textbf{and}
  - The patient cooperates with care management program, \textbf{and}
  - The drug is obtain through appropriate distribution channel (e.g. specialty pharmacy) and physician practice, \textbf{and}
  - The drug is priced based on performance (see below)

- Otherwise, drug is placed in tier with high cost sharing
Distribution and Physician Practice: The Basic Trade

- Manufacturer cooperates with insurer in moving practices from markups to specialty pharmacy (and/or B&B without big markup), good data capture, coordination of office administration with care management program.

- Insurer agrees not to design reimbursement and consumer benefits that discriminate against office administered drugs, and to raise professional fees to replace drug markups.
Performance-based Pricing

- Manufacturer’s preference: list price, based on reference product price plus differentiator \((V=R+D)\)
  - \(V=\text{Value-based price}\)
  - \(R=\text{Reference product price}\)
  - \(D=\text{Difference between new and reference drug}\)
- Without therapeutic substitution, manufacturer wins
- With widespread therapeutic substitution, insurer wins
- With limited but growing substitution, is there a trade?
Number of Preferred Products by Therapeutic Category

Indicate the number of preferred products for each of the following therapeutic classes/products.

Therapeutic Category

- Growth Hormones
- Multiple Sclerosis
- Rheumatoid Arthritis
- Erythropoietin-Stimulating Agents
- Hepatitis C
- Psoas
- Granulocyte Macrophage Colony-Stimulating Factor
- Pulmonary Arterial Hypertension Agents (Oral)
- Infertility—Follicle-Stimulating Hormone

- 0
- 1
- 2
- >2

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Performance-Based Pricing

- Performance-based price: \( P = R + D + E \)
  - \( P \): performance-based price
  - \( R \): reference price of lowest cost therapeutic equivalent, using comparative effectiveness studies to determine equivalence
  - \( D \): difference between new and reference drug, updated with new evidence on efficacy, safety, patient experience
  - \( E \): efficiencies from cooperation: criteria for appropriate use, care management, consumer cost sharing, distribution, physician practice support, data capture and analysis
Conclusion and summary

- Public policy is wavering between replacing and supporting market forces in health care
- Biopharma industry is under pressure
- Areas of potential cooperation: biotech/insurers
  - Patient identification and care management
  - Value-based insurance design and cost sharing
  - Distribution and physician practice support
  - Performance-based pricing
- Immunology as current example
- Oncology as most important sector to watch