CHAPTER: 3
Applications of Pharmacoeconomics

BY
Mrs. K. SHAILAJA., M. PHARM.,
LECTURER
DEPT OF PHARMACY PRACTICE,
SRM COLLEGE OF PHARMACY
To provide pharmacoconomics and outcomes research, education, and consulting services to assess the value of pharmaceutical products and services in today’s healthcare systems.

Summary of Services:

- **Research services**
  - customized PE and OR studies
  - site or population-specific economic models
  - partnerships with HC organizations
- **Educational services**
  - PE lectures and workshops
  - PE educational materials
- **Consulting services**
  - protocol design and strategic PE plans
Primary PE Applications

Drug Therapy Evaluations

Justify Pharmaceutical Care Services
Potential Hurdles for Application of PE to Drug Decision-Making

- Lack of "PE sophistication" by target audience (e.g. hospital administrators, MC pharmacy directors)
- Lack of "PE sophistication" by pharmacy practitioners who are generating and/or interpreting PE data
- Lack of organizational resources (time and $$)
- Component vs. system management approach
- Budget responsibilities
- "Silo" mentality
HOW Pharmacoeconomics is Applied in the Real World
Strategies for Putting Theory into Practice

► **Strategy 1:**
  - Interpret, critique, and use results from studies published in the literature

► **Strategy 2:**
  - Utilize economic modeling

► **Strategy 3:**
  - Conduct a local observational PE evaluation
Factors to Consider When Selecting an “Application Strategy”

- What is the PE question being asked?
- What is the timeframe for the decision?
- What are the resources and data sources available?
- What is the impact of the decision on organizational costs and quality of care?
Scale for Selecting a PE Application Strategy

(Potential Impact of Decision on Cost And Quality)

None    Mild    Moderate    Extreme

Compare acquisition costs

Review PE literature, conduct sensitivity analysis

Perform economic modeling

Conduct retrospective study

Conduct prospective study

(Application Strategy)
Strategy 1: Use the Literature

ADVANTAGES
- Data often plentiful
- Quick
- Inexpensive
- Subject to peer-review
- Variety of results can be examined
- Results from RCT

DISADVANTAGES
- Results from RCT (costs may be protocol driven)
- External validity
- Placebo-controlled
- Misuse of PE terms
- Variations in quality of studies published
**Strategy 2: Use Economic Modeling**

**ADVANTAGES**
- Inexpensive
- Quick
- Yields organization-specific results
- Bridges efficacy to effectiveness
- Data collection is unobtrusive
- Increased ability to generalize results

**DISADVANTAGES**
- Results dependent on assumptions
- Potential for researcher bias
- Controversial
- Reluctance of decision-makers to accept results
- May require a meta-analysis of the literature
Strategy 3: Conduct a Local Observational Study

ADVANTAGES
- Flexible
- Yields provider-specific data
- Reflects “usual care” or effectiveness
- Usually offer comparative data
- Data from multiple sources can be used
- Are less expensive than RCT

DISADVANTAGES
- Expensive (time and $)
- Difficult to control and randomize
- Potential for patient selection bias
- Small sample size
- May be difficult to generalize results to other patient populations and providers
# Additional PE Data Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCT</td>
<td>Measure efficacy</td>
<td>Do not reflect “usual care”</td>
</tr>
<tr>
<td></td>
<td>Well controlled</td>
<td>Results may be difficult to generalize</td>
</tr>
<tr>
<td></td>
<td>Powered to detect statistically significant differences</td>
<td>Not usually comparative</td>
</tr>
<tr>
<td></td>
<td>Offer sufficient sample size</td>
<td>Not usually powered to detect QoL or Economic differences</td>
</tr>
<tr>
<td></td>
<td>Collect prospective data</td>
<td>Time-consuming &amp; expensive</td>
</tr>
<tr>
<td>Database studies</td>
<td>Have large sample size potential</td>
<td>Differ in quality of databases</td>
</tr>
<tr>
<td></td>
<td>Can provide data quickly</td>
<td>Use on inconsistent coding</td>
</tr>
<tr>
<td></td>
<td>Are reflective of “usual care”</td>
<td></td>
</tr>
<tr>
<td>Expert opinions</td>
<td>Are inexpensive</td>
<td>Have potential for bias</td>
</tr>
<tr>
<td></td>
<td>Can provide missing data quickly</td>
<td>Are controversial</td>
</tr>
<tr>
<td></td>
<td>Are reflective of usual care</td>
<td>Potential for large variations</td>
</tr>
<tr>
<td></td>
<td>Can adjust to protocol-driven resource use</td>
<td></td>
</tr>
</tbody>
</table>