INTRODUCTION TO PHARMACOECONOMICS AND OUTCOMES RESEARCH: IT IS TIME FOR EGYPT!

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University of Maryland
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## Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1:00 – 1:15</td>
<td>Introduction</td>
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<tr>
<td>1:15 – 1:25</td>
<td>ISPOR</td>
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<tr>
<td>1:25 – 1:40</td>
<td>ISPOR Egypt Chapter</td>
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<tr>
<td>1:40 – 2:00</td>
<td>Introduction to Pharmacoeconomics and Outcomes Research</td>
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<tr>
<td>2:00 – 2:15</td>
<td>Cost Effectiveness Analysis</td>
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<td>2:15 – 2:50</td>
<td>Open Discussion/Future Directions</td>
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<tr>
<td>2:50 – 2:55</td>
<td>Closing Remarks/Schedule next meeting</td>
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International Society for Pharmacoeconomics and Outcomes Research

- Vision, Mission, and Scope
- Membership
- Scientific communication
- Global communication
- Research
- Education
Mission, Vision, and Scope

- **Mission**: The mission of ISPOR is to increase the efficiency, effectiveness, and fairness of health care resource use to improve health.

- **Vision**: ISPOR is recognized globally as the authority for outcomes research and its use in health care decisions towards improved health.

- **Scope**: The ISPOR scope and sphere of influence includes outcomes researchers, health technology developers and assessors, regulators, health economists, health care policy makers, payers, providers, patients, populations, and society as a whole.
Membership
Membership
Scientific Communication
Global Communication

- Three Annual Meetings
- ISPOR Regional Consortia
- ISPOR Regional Chapters/Networks
ISPOR Regional Chapters

- Belarus Chapter
- Bosnia-Herzegovina Chapter
- Croatia Chapter
- Czech Chapter
- Greece Chapter
- Hungary Chapter
- Poland Chapter
- Republic of Macedonia Chapter
- Russia Chapter
- Russia Far-East Chapter
- Russia HTA Chapter
- Serbia Chapter
- Slovakia Chapter
- Spain Chapter
- Turkish SCP Chapter
- Ukraine Chapter
- Slovenia Chapter *
- Beijing Chapter
- Chinese MDA-PE Chapter
- Hong Kong Chapter
- India Chapter
- India-Manipal Chapter
- Indonesia Chapter
- Japan Chapter
- Korea Chapter
- Malaysia Chapter
- Mongolia Chapter
- Pakistan Chapter
- Shanghai Chapter
- Singapore Chapter
- Taiwan Chapter
- Thailand Chapter
- China-East Chapter *
- China-SouthWest Chapter *
- Philippines Chapter *
- Vietnam Chapter *
- Israel Chapter
- Jordan Chapter
- Saudi Arabia Chapter
- United Arab Emirates Chapter
- Argentina Chapter
- Brazil Chapter
- Chile Chapter
- Colombia Chapter
- Ecuador Chapter
- Peru Chapter
- Venezuela Chapter
- Uruguay Chapter *
- Australia Chapter
- New Zealand Chapter
Research
Education

- ISPOR Educator’s Tool Kit
- ISPOR Distance Learning Program
- ISPOR Educational Directory
- ISPOR Short Courses
Summary
Pharmacoeconomics and Outcomes Research

- **Pharmacoeconomics:**
  - To identify, measure and compare costs and consequences (outcomes) of pharmaceutical interventions
  - To allocate health care resources, assuring that each patient receives the most suitable treatment
  - It includes ideas and methods from a variety of domains including statistics, clinical epidemiology, decision analysis, and psychometrics.
Figure 1.3: Major drivers of and resistors to the wider use of pharmacoeconomics

Drivers
- Increasing healthcare expenditure
- Focus in R&D and S&M strategies
- Support in pricing & reimbursement negotiations

Resistors
- Negative perceptions of methodology
- Study and personnel costs
- Disincentive to R&D investment

Pharmacoeconomics

Source: The Pharmacoeconomics Outlook
Pharmacoeconomics and Outcomes Research

- Outcomes Research
  - Refers to the scientific design, data collection, and analysis of the end results of medical care.
  - It is research designed to evaluate the medical effectiveness of different therapeutic interventions.
Figure 2. The Conceptual Model: Economic, Clinical, and Humanistic Outcome (ECHO) Model
A Comparison..

<table>
<thead>
<tr>
<th></th>
<th>Clinical Research</th>
<th>Outcomes Research</th>
<th>Pharmaco-economics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main aim</strong></td>
<td>To determine efficacy</td>
<td>To determine effectiveness</td>
<td>To determine efficacy</td>
</tr>
<tr>
<td><strong>Study design</strong></td>
<td>Randomized clinical trials</td>
<td>Observational studies and randomized clinical trials</td>
<td>Economic analyses based on outcomes data and clinical trials</td>
</tr>
<tr>
<td><strong>Main measures</strong></td>
<td>Efficacy and safety intermediate end points</td>
<td>Patient-related outcomes</td>
<td>Costs and outcomes</td>
</tr>
<tr>
<td><strong>Time frame</strong></td>
<td>Short term</td>
<td>Long term</td>
<td>Long term</td>
</tr>
<tr>
<td><strong>Based on</strong></td>
<td>Ideal (not normal) clinical practice</td>
<td>Normal clinical practice</td>
<td>Normal clinical practice</td>
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## Comparison of Pharmacoeconomic Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Cost unit</th>
<th>Outcomes measure</th>
<th>Interpreting study results</th>
</tr>
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<tbody>
<tr>
<td>CMA</td>
<td>dollar</td>
<td>Assumed to be equal</td>
<td>Choose product with lowest cost</td>
</tr>
<tr>
<td>CEA</td>
<td>dollar</td>
<td>Natural clinical units</td>
<td>Lowest cost per unit of effectiveness</td>
</tr>
<tr>
<td>CUA</td>
<td>dollar</td>
<td>QALYs</td>
<td>Lowest cost per unit QALY</td>
</tr>
<tr>
<td>CBA</td>
<td>dollar</td>
<td>dollar</td>
<td>Ratios of greater than 1.0</td>
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Comparison of Pharmacoeconomic Methods

Figure 3: Process for Incorporating Pharmacoeconomic Evaluations in Formulary Decisions

If the new treatment seems to have a **more favorable efficacy** and **safety** profile:

- It is **more** expensive
- Need of PE analysis: **CEA, CUA, CBA**

If the new treatment seems to have the **same efficacy** and **safety** profile:

- It is **less** expensive
- **Choose it**
- **Need of PE analysis:** **CMA**

**PE studies from the literature**

| **Efficacy** from RCTs/MA | **Cost** from real world | Plan and perform a PE study |

Legend: RCTs = (randomized controlled trials); MA = meta-analysis
## Criteria for Selecting Pharmacoeconomic Study Methods

<table>
<thead>
<tr>
<th>Research Question for Comparing Therapies</th>
<th>Appropriate method</th>
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<tr>
<td>Similar therapies producing essentially identical outcomes</td>
<td>Cost minimization analysis (CMA)</td>
</tr>
<tr>
<td>Different therapies resulting in clinically different patient outcomes</td>
<td>Cost-effectiveness analysis (CEA)</td>
</tr>
<tr>
<td>Similar therapies affecting quality of life or patient preference for treatment</td>
<td>Cost utility analysis (CUA)</td>
</tr>
<tr>
<td>Comparison of different programs with different outcomes (for resource allocation decisions)</td>
<td>Cost-benefit analysis (CBA)</td>
</tr>
</tbody>
</table>
Cost Effectiveness Analysis

Figure 1.2: Parameters influencing pharmacoeconomic studies

Source: The Pharmacoeconomics Outlook
Discussion

- Thank You!