

# Now More Than Ever, HEOR Plays a Central Role in Forging the Modern Healthcare Agenda



**Omar Dabbous, MD, MPH**  
Vice President, HEOR & RWE  
**AveXis**



**Russell Becker, MA**  
HEOR Consultant  
**Russell Becker Consulting**

# Role of HEOR Evidence in Healthcare Decision Making

Omar Dabbous, MD, MPH

# Objectives

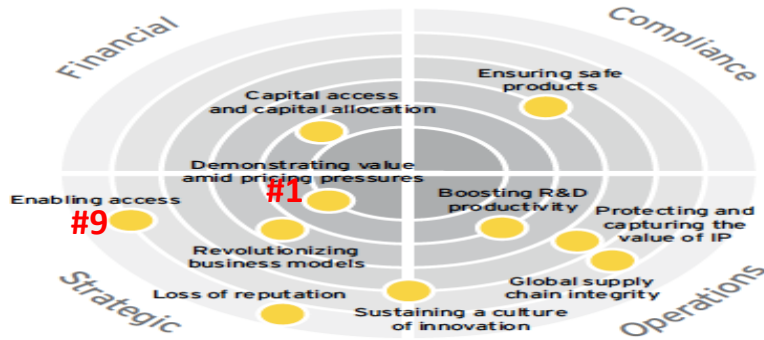
By the end of this presentation you will be able to:

- Examine the current state & future of HEOR data in healthcare decision-making
- Discuss and develop HEOR & RWE / Market Access strategies and tactics
- Build strong value story and communication plan, and strong relationships with payers, the medical community, and patient advocacy groups
- Determine the impact and value of evidence-based pricing and payment
- Understand cost models, RWE and QoL impact on healthcare decision making

To achieve optimal patient access by  
defining **strategies** and by generating  
and communicating **evidence** of  
product **value** and **affordability** to all  
stakeholders

# Current Healthcare Environment Impacting Pharma

## The top 10 business risks for life sciences



- Healthcare cost continues to increase ~ 18% of GDP in USA
- Aging population, access to care, quality, cost
- Conditional pricing: effectiveness but not efficiency
- Coverage with evidence: RWE required to verify that the conditions are met to maintain conditional price long-term
- The driver of decision is moving from efficiency to affordability assuming a good clinical and medical added value
- Budget constraints leading to cost containment measures
- Demonstrating value remains a challenge
- Lack of appropriate clinical endpoints is a primary cause of failure to achieve recommendation by HTA in Europe (80%)



Regulatory Approval

Shifting Goals  
The Rules also  
Changed



Market Access Approval

# Major Trends Impacting Future Healthcare Environment

## Integrated Health System(IHS)

- Accountable Care Organizations in US
- Coordinated health care network in Europe

## Adaptive Licensing ( staggered approval or progressive licensing)

- Iterative development: start with one indication then generate data for expansion
- Use of real world data
- More adapted to decision making requiring involvement of all stakeholders

## Precision Medicine

- Gene sequencing are changing the way we treat diseases
- Gene and targeted therapy and better outcomes
- Decrease cost of treating costly diseases

## Coverage with evidence development (CED)

- Access will happen over a window and not a point in time
- CMS will cover in the context of approved clinical studies or with the collection of additional clinical data
- Increase manufacturers uncertainty after approval

## Expansion of HTA

- Increase demand for standardize evidence at time of launch
- International coordination of HTA agencies

## Patients centric organizations (PCO)

- Role of patients in decision making
- Evidences should integrate patient perspective

## Digital Health

- Easy access to health information
- Big data
- Mobile health applications, sensors, Fitbit, etc.

# Pharmaceutical Business Model: Then & Now

Old Business Model		New Business Model
R&D go/no-go decisions	<ul style="list-style-type: none"> <li>• Safety</li> <li>• Efficacy</li> </ul>	<ul style="list-style-type: none"> <li>• Safety</li> <li>• Efficacy</li> <li>• Reimbursability/Value</li> </ul>
Efficacy	<ul style="list-style-type: none"> <li>• Relative efficacy</li> </ul>	<ul style="list-style-type: none"> <li>• Comparative effectiveness</li> </ul>
Price	<ul style="list-style-type: none"> <li>• Free pricing</li> </ul>	<ul style="list-style-type: none"> <li>• Value-based pricing</li> <li>• Cost effectiveness</li> </ul>
Reimbursement/ Access	<ul style="list-style-type: none"> <li>• Open access</li> </ul>	<ul style="list-style-type: none"> <li>• Restricted access</li> <li>• “Step therapy”</li> <li>• Market segmentation</li> <li>• Risk sharing</li> </ul>
Health Economics & Outcomes Research (HEOR)	<ul style="list-style-type: none"> <li>• Nice to have</li> <li>• No seat on Development team</li> </ul>	<ul style="list-style-type: none"> <li>• Must have</li> <li>• Core member of development team processes</li> <li>• Payer-focused team</li> </ul>
Post-marketing studies	<ul style="list-style-type: none"> <li>• Efficacy, safety</li> </ul>	<ul style="list-style-type: none"> <li>• Efficacy, Safety, Effectiveness</li> <li>• Comparative effectiveness</li> <li>• Validation of value-proposition</li> </ul>

**We are changing internally, but it is not **radical** enough.**

# Strategic Planning

## Issues:

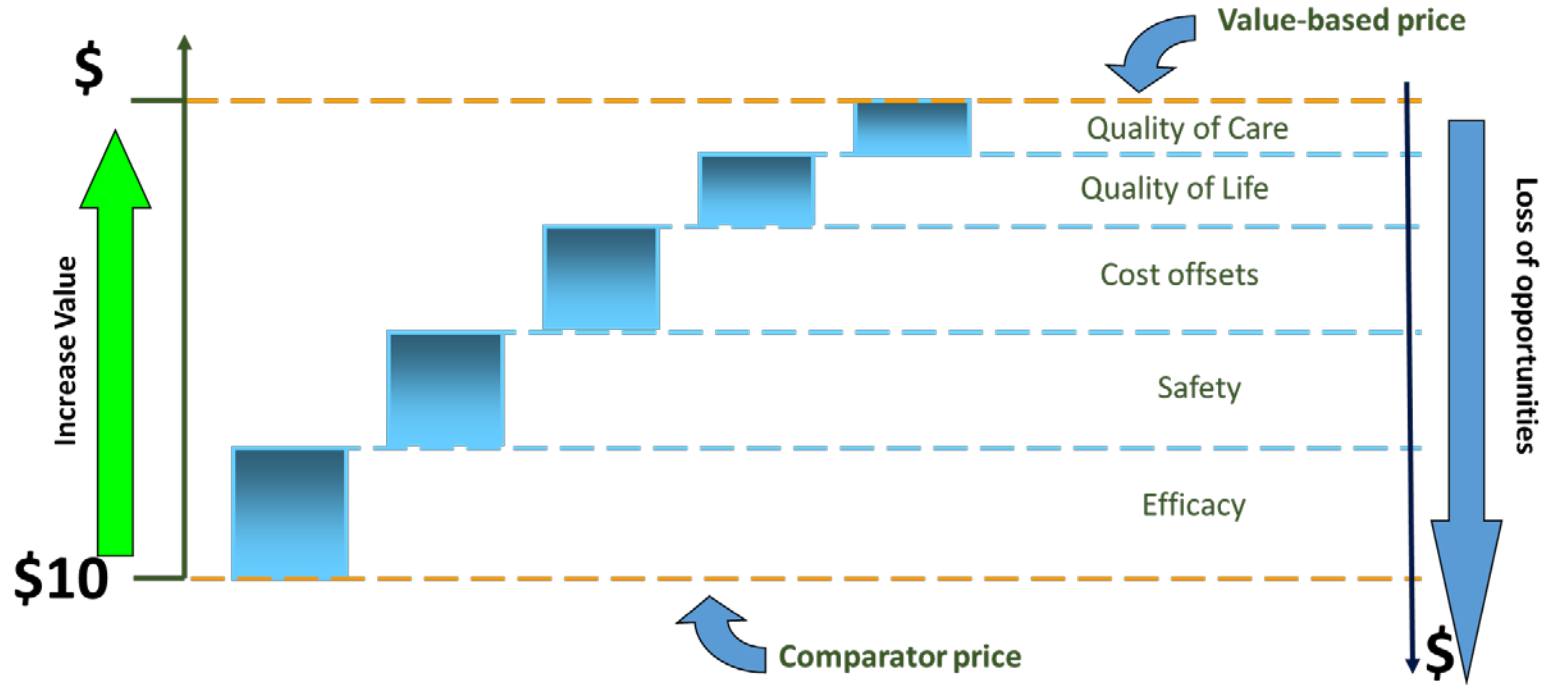
1. lack of aligned strategies
2. lack of best practice working processes
3. Lack of one process / document capturing the strategy, tactics, and value Stories



# HEOR & RWE Payer Strategy

- **HEOR / Clinical development strategy**
  - Clinical development plan takes into account Comparative Effectiveness Research (CER) drivers in the design of the pivotal Phase III studies
  - CER considerations used in go/no-go decisions for development products
  - Payer-relevant health economics and PRO endpoints are included in clinical development programs
  - Early cost and Indirect treatment comparison models
  - Humanistic data (e.g., QoL)
- **Value-based pricing strategy**
  - Early engagement with payers and HTA agencies at TPP phase to seek feedback on
    - Key endpoints in pivotal clinical trials
    - Key value proposition drivers for new products
    - Potential place of therapy (formulary tier status) for new products at launch
  - Price levels based on WTP threshold
  - Cost effectiveness analysis to support value and product positioning

# Value-based Pricing, Price and Value Proposition Are Inexplicably Linked

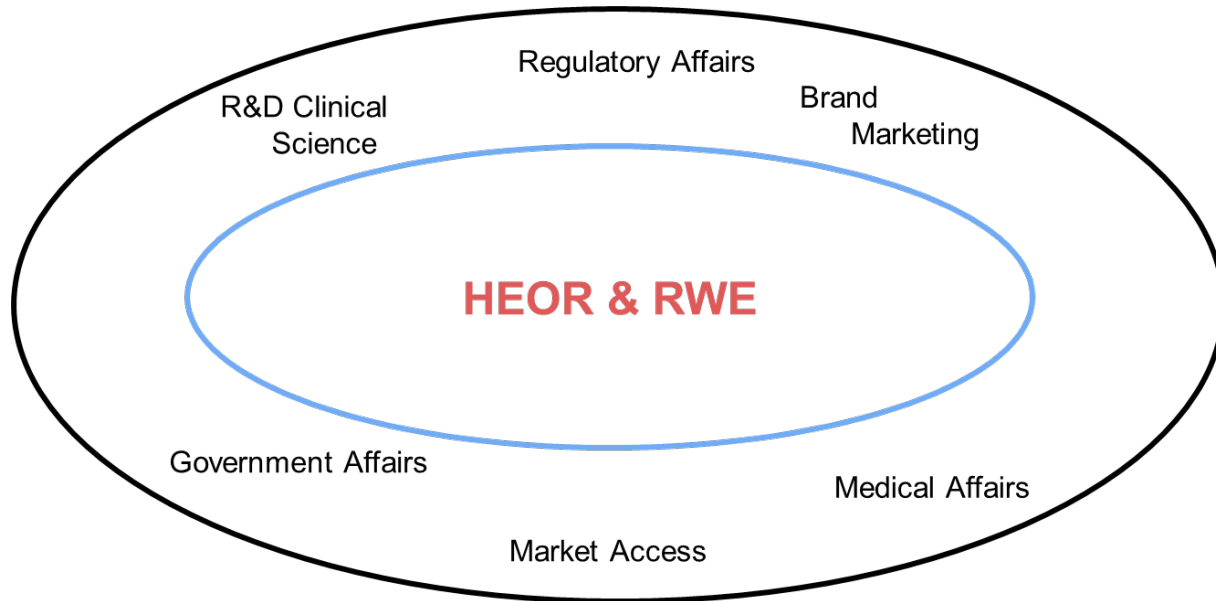


# HEOR & RWE Payer Strategy

- **Reimbursement**
  - Reimbursement strategy targeted to patient population where product is most cost effective
  - Risk-sharing (e.g., pay for performance, volume caps, structured rebates)
  - Post marketing studies to confirm/validate product value proposition
    - RWE/Observational studies
    - Retrospective claims data analysis
- **Partnership with payers:**
  - HTA advice: EUnetHTA , NICE, etc..
  - Payer and HTA consultants adboards
- **Organizational strategy**
  - Investment in HEOR function to focus on payer needs
    - Greater emphasis on integration of economic and humanistic (PRO, QOL) endpoints in phase II and III studies to generate evidence required by payers at time of launch
    - Cost effectiveness and budget impact analysis for reimbursement dossier to address value of new innovations and affordability (e.g. budget)
    - Field-based HEOR team to work with payers to address their needs in a timely fashion
    - Create a HTA – Regulatory process or type function to focus on payers and providers

# Building a Successful HEOR & RWE Strategy

The Magic is in the Mix:



# HTA and Payers Ad-board to Inform Clinical Development and HO Plans and Test Value Proposition



# Example of HEOR & RWE PAN20 Strategy and Tactics



## Demonstrate value of PAN20 in patients with mPDA cancer

- **Cost-effectiveness model**
- Budget impact model
- **Global value dossier / AMCP**
- Determine utility benefit over comparators
- **Payer early engagement**
- **Payer ad-board**

## Generate scientific data to differentiate PAN20

- **Establish the relationship between median PFS (or TTP) with median OS**
- **Characterize treatment pathways and management**
- **Mixed treatment comparison of PAN20 vs. SOC**
- **Disease landscape**
  - Disease registry
  - TE awareness publications

## Support CDx and PAN20 pricing and reimbursement

- **Scoping of HTA and HEOR environment**
- Establish CDx clinical utility, cost benefits, and its applicability in HTA / payer environment
- **Pricing models for CDx and PAN20**
  - Risk sharing plans
- **Payer and HTA early engagement**

## Support other PAN20 indications

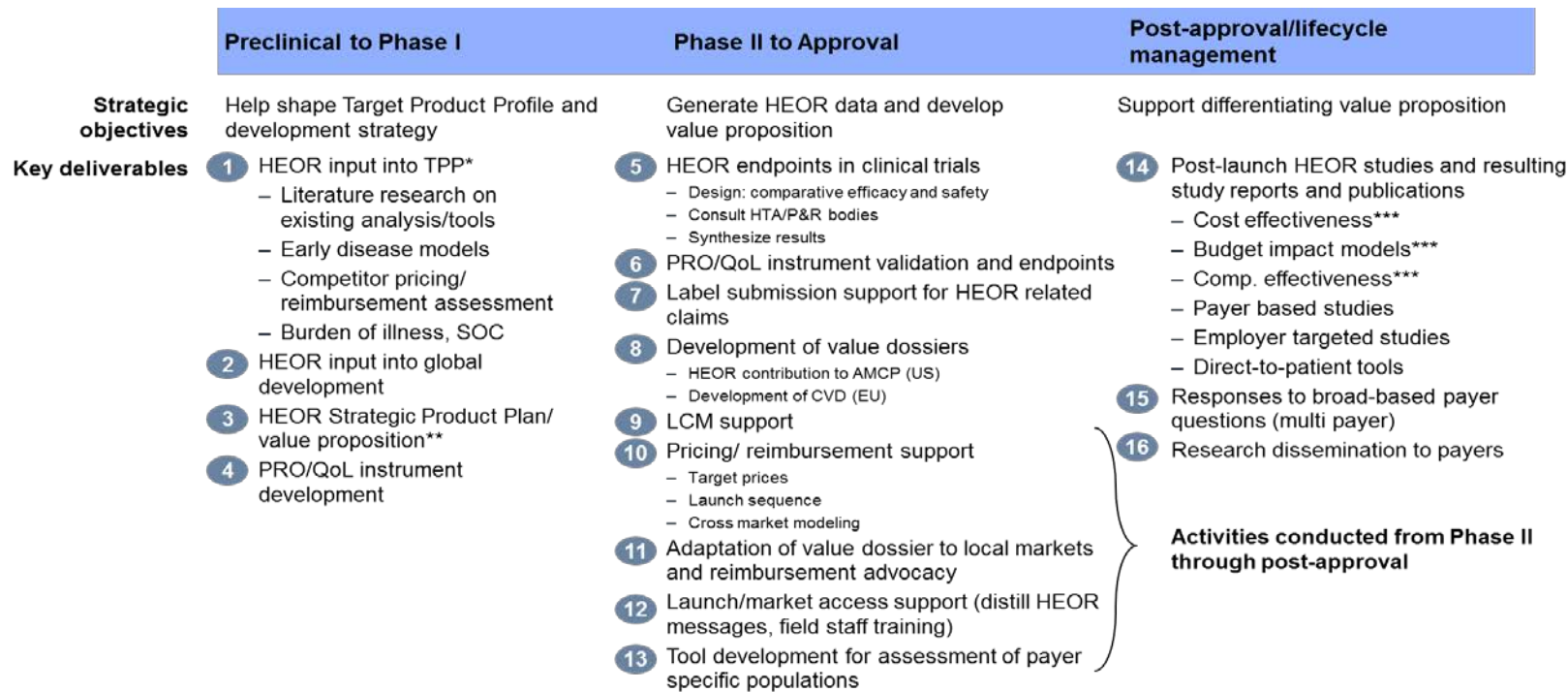
- **Scoping of HTA and HEOR environment**
- Preliminary modeling
- Evidence generation for efficacy/utility regression analysis
- **External expert payer and HTA advice**

# Evidence Generation

## Issues:

1. Lack of on strategy tactics
2. Tactics based on ad hoc requests
3. Redundancies and Tactics results that did not address the company needs

# HEOR Activities/Deliverables Roadmap Across the Product Lifecycle



\* Target Product Profile (TPP); Integrated Global Development Plan (IGDP); Integrated Development Strategy (IDS); Draft Product Profile (DPL)

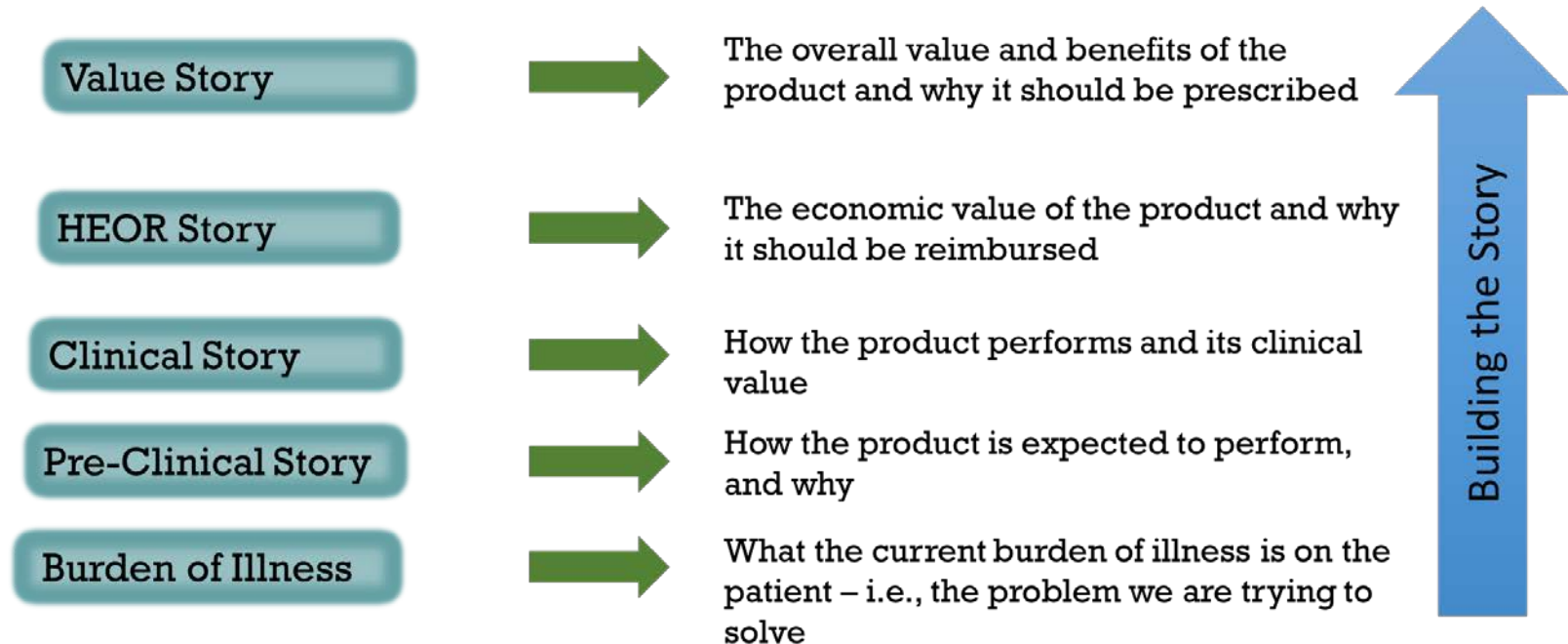
\*\* To be updated across product life cycles

\*\*\* May also be incorporated in Phase II to Approval deliverables (e.g., in support of AMCP dossiers or agency filings)



# Value Story & Value Communication

# Building Blocks of the Value Story

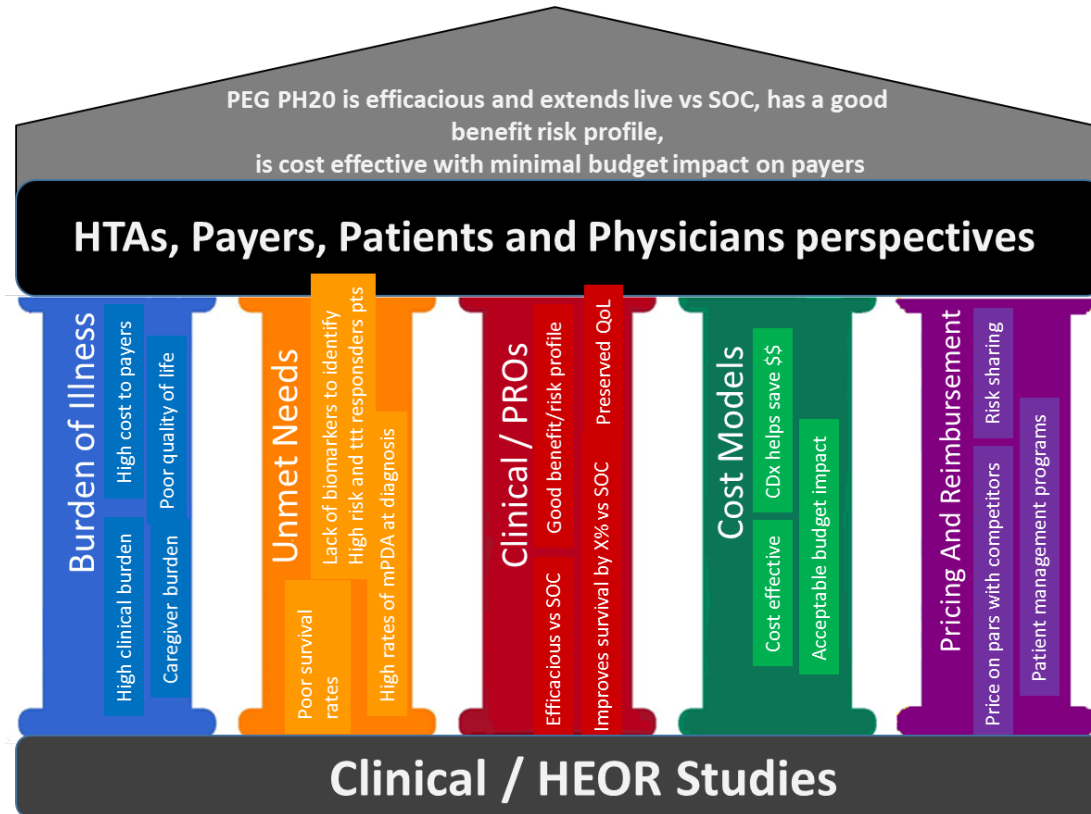


# The Lifecycle of HEOR Publications



\*can also be conducted and published across all development phases

# Example of a Value Story: PAN20



# Strategic Patient Access Road Map

Pillars	Activity
Value Strategy	Shared goals across functions
	HEOR Strategy
	Pricing and reimbursement Strategy
	Launch Sequencing Plan (US – Europe – APAC - LATAM)
Value Evidence Identification	Formal Advisory board & Early Scientific Advice (EU)
	Evidence Gap Analysis & Mitigation Plan
Value Evidence Generation	Systematic Literature Review SoC & BoD (SLR)
	Burden of Illness and unmet needs research
	Budget Impact Model
	Cost-Effectiveness Model
	Quality of Life Data
Value Communication	Strong and Coherent Value Story
	Objection Handler
	Core Value Dossier (AMCP, local HTA dossiers)
	Training field based on Value story and Objection Handlers Materials
Payer Engagement	Team Training on Payer Negotiation
	Payer Engagement (US)
	Country Level P&R Submissions (Europe – APAC - LATAM)

# Conclusions

- Keep the end in mind: Value story, global core dossier addressing local needs
- Must develop efficient and comprehensive clinical and HEOR plans
- Understanding the payers and HTA needs and requirements
- Partner with payers and HTAs and seek early advice through various approaches
- Generate value data, develop and refine cost models to pressure test value story and help guide trials design
- Cross-functional engagement is key for successful pricing and reimbursement strategies and supporting data generation.

# Questions?

# Using budget impact analysis, cost-effectiveness analysis, and real-world evidence to inform payer decisions

Russell Becker



# Outline

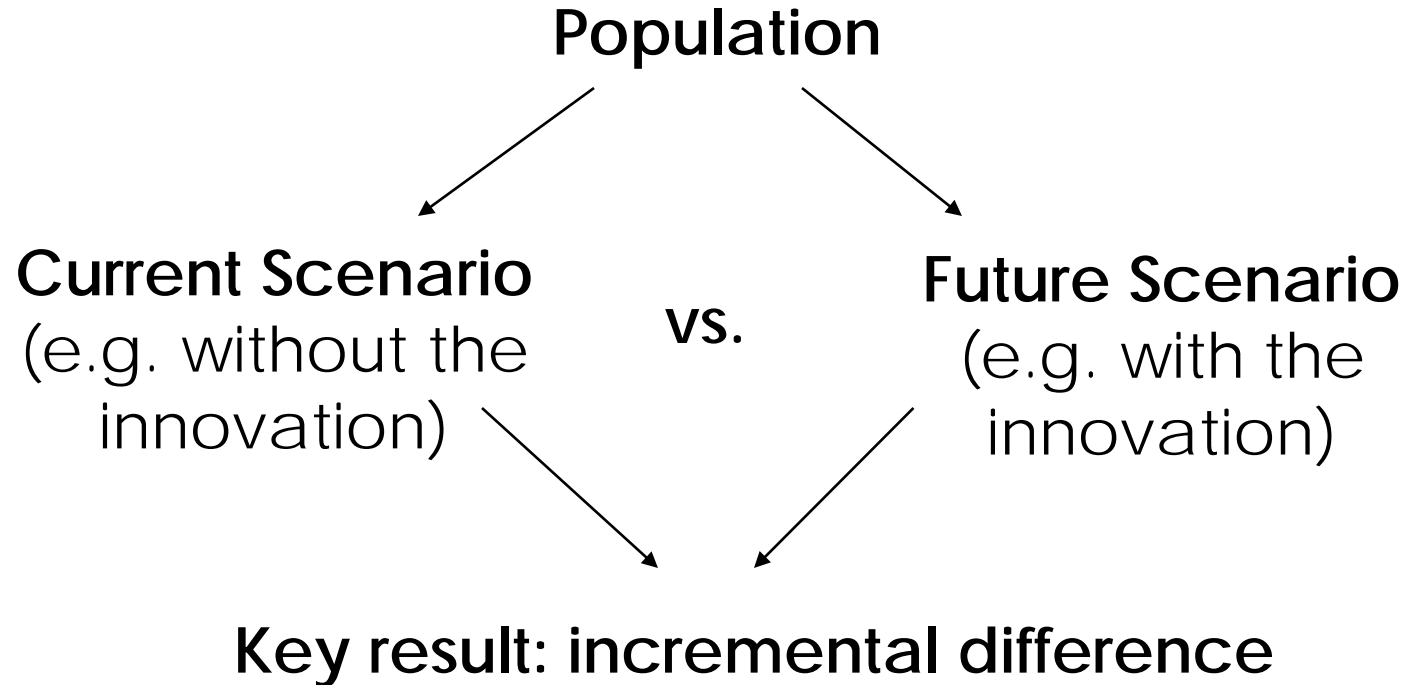
- Budget Impact Analysis (BIA) and Cost-effectiveness Analysis (CEA) defined
- Users and Uses of BIA and CEA
- BIA and CEA Data
- Team Approaches to BIA and CEA Models

# Budget Impact Analysis and Cost-Effectiveness Analysis Defined

# What is budget impact analysis (BIA)?

- Explains and predicts the potential financial impact of introducing a new health care intervention into a health care system that has finite financial resources
  - Most often used to understand the impact of new therapy or intervention
  - May also look at the impact of changing the amount of utilization of an existing therapy
- **Sample study question:** What will be the impact of the introduction of Drug Y on the pharmacy budget and on the total budget for a population of 100,000 patients treated for indication X?

# What is budget impact analysis?



# Cost-effectiveness Defined

- Cost-effectiveness is the cost required to achieve an outcome
  - Most often expressed in ratios:

$$\frac{\text{Cost of technology}}{\text{Resulting effect}} = \text{Cost per unit of effect achieved}$$

- Incremental cost effectiveness between two treatments:

Cost of Intervention A – Cost of Intervention B

Effectiveness of Intervention A – Effectiveness of Intervention B

- E.g., incremental cost per Quality-adjusted life-year (QALY) gained of 30,000 GBP per QALY

# Users and Uses of BIA and CEA

# Users of BIA and CEA

- Drug, device, and diagnostic developers
- Health Technology Assessment (HTA) organizations
- National or regional health-care programs including:
  - Private insurance plans
  - Health-care delivery organizations
  - Employers who pay for employee health benefits

# Situations where BIA and CEA are Used

BIA and CEA are useful in a variety of situations to determine the affordability of a health care intervention:

- Formulary approval
- Dossier submissions
- Health technology assessments
- Pricing and reimbursement approvals
- Payer budgeting
- Internal pricing and economic message testing (within drug, diagnostic, and device development companies)



# Perspective and Audiences

BIA and CEA are performed from the cost perspective of the audience of interest.

- National organizations will be interested in the cost impact of a national population
- Individual hospital and private insurance entities will be only interested in costs for their specific client populations
- Private payers may restrict their interest to direct medical costs
- Public payers may also have a broader interest (societal perspective)
- Pharmacy budget holders may only be interested in pharmacy costs

# BIA and CEA Data

# BIA and CEA inputs

## Clinical inputs:

- Treatment pathways
- Efficacy/Effectiveness
- Clinical outcomes

## Epidemiology inputs:

- Indication population
- Rate of disease
- Sub-groups by age, sex, severity, etc.

## Humanistic inputs:

- Utility
- Quality of Life

## Economic inputs:

- Resource utilization
- Drug costs
- Utilization unit costs (e.g. physician visits)
- Hospital costs
- Adverse event treatment costs
- Market share
- Contracted price adjustments (e.g., discounts)

# Data Sources for BIA and CEA Models

- Clinical trials
- Real-world studies
  - Observational
  - Registries
- Retrospective studies (including claims data)
- Standardized databases – Public and proprietary
  - Drug cost and utilization
  - Resource cost and utilization
  - Hospital discharge claims data
- Price lists (e.g., drug, physician fees, procedures)
  - Hospitals
  - National lists
- Published literature
- Expert opinion

# Use of Best Available Evidence

## ***“Models are made up”***

- Models are necessary because other types of “better” studies are not possible.
- Given the audience perspective for the models, the model data needs to reflect that perspective as best as possible.
- Most often model audiences exist in the **real world** (i.e., not clinical trial world or in hypothetical scenarios. Thus, the models attempt to simulate the **real world**.
  - Thus, models should use the *best available evidence*.

**Real-world evidence > Clinical trial data >  
Retrospective data > Expert opinion**

# Team Approaches to BIA and CEA Models

# Team Approach to BIA/CEA Model Development – *Early Phase*

- Used for internal purposes
- Early phase models can be used to inform drug development via hypothesis testing
  - Informs later-phase clinical trial design
    - Influence comparator selection
    - Inclusion of endpoints
    - Inclusion of quality of life
  - Hypothesis testing of range of results for:
    - Various indication populations
    - Various comparators
    - Ranges of prices and costs
    - Inclusion of various cost parameters

Work with clinical/medical teams regarding trial design needs. Collaborative process.

Work with payer-focused teams regarding likely market issues. HEOR meets payer-focused teams needs. Early determination of HEOR SWOT in market.

# Team Approach to BIA/CEA Model Development – Late/*Peri-Launch Phase*

- Used primarily for external purposes
- Late/peri-launch phase models can be used to support product approval activities:
  - Dossier development
  - HTA and pricing/reimbursement body submissions
  - Post-launch formulary submissions

Work with medical and payer-focused teams regarding preparations for approval activities. HEOR provides support for what is needed.



# Team Approach to BIA/CEA Model Development – *Late/Peri-Launch Phase* (cont.)

- Can also be used to identify data gaps for the model and for the product in general
  - Identify where real-world data is missing and needed
    - Consider designing observational studies and/or registries
  - Other issues may involve data needs (either clinical or economic) for:
    - Additional indications
    - Sub-populations
    - Additional markets (model adaptations)
    - Other resource utilization and cost issues

Collaborative effort among **all teams** regarding development of studies. HEOR ensures that model gaps are met.

Work with **medical team/payer-focused teams/local markets** to address needs properly. HEOR will propose solutions.

# Team Approach to BIA/CEA Model Development – *Post-Launch*

- Models are revised and adapted to meet market needs
    - Real-world data is collected and applied to models
    - Any issues identified by payers/HTA can be addressed with model revisions
      - Required issues prioritized
    - Other data issues are resolved with updated and adapted models may involve data needs (either clinical or economic) for:
      - Additional indications/Sub-populations
      - Revise models with any improved/updated resource utilization and cost issues
      - Create multiple model adaptations for additional markets
- Collaborate with medical teams regarding execution and application to model.
- Work with medical team/payer-focused teams/local markets to address needs properly.

# Questions?

## Get Involved in the Community Today & Stay Connected!



**MAPS2018**  
Annual Meeting

February 25–27, 2018  
*Miami, Florida*



Email: [Info@MedicalAffairs.org](mailto:Info@MedicalAffairs.org)

