The Challenge of Uncertainty in Regulatory Decision-Making

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Public Workshop: Characterizing and Communicating Uncertainty in the Assessment of Benefits and Risks
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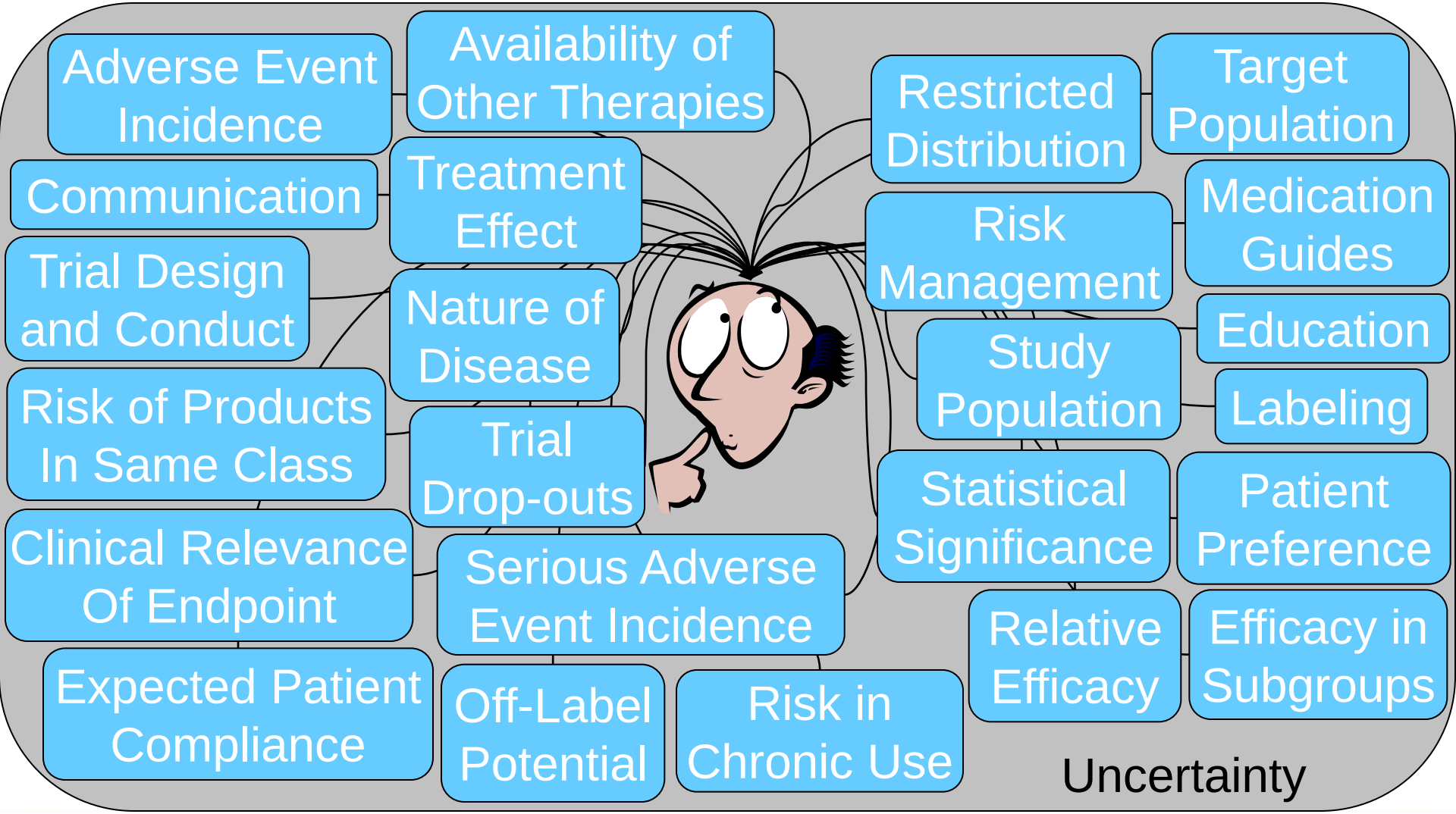
Benefit-Risk Assessment in Human Drug Review

- FDA's regulatory decisions are based on our assessment of the benefits and risks of the product under review.
- Our laws and regulations provide the boundaries for our decisions
- Our decisions are informed by an extensive body of evidence, analyzed through the lens of science, medicine, policy, values, and judgment
- Our benefit-risk assessment places our evaluation of benefits and risks in the context of the underlying disease and available treatment options

Decision Factor	Evidence and Uncertainties	Conclusions and Reasons
Analysis of Condition		
Current Treatment Options		
Benefit		
Risk		
Risk Management		
Benefit-Risk Summary and Assessment		

What's On The Regulator's Mind?



Uncertainty in Drug Regulation

- Even with all the evidence available, uncertainties are present, and they can be significant. For example:
  - Uncertainty in Benefit stemming from
    - Limits in our scientific understanding of a disease
    - Inconsistent or contradictory evidence across multiple studies
    - Relationship between study population and those who will actually take the drug
  - Uncertainty in Risk, stemming from
    - Numerical imbalances of adverse events in treatment and control groups
    - Post-market data from sources of varying levels of rigor
    - Ability of the health care system to adequately manage a risky drug

Decision-Making under Uncertainty

- Drawing conclusions in the face of uncertainty is a complex and challenging task; nonetheless, we must work through it and decide!
- Where uncertainty is high, clinical judgment, values, and input from others (patients, ACs) may have greater role
- We do not yet employ a systematic approach to dealing with uncertainty when it might be helpful

Our Objective for this Workshop

- Identify a potential path forward in developing an approach to working through uncertainty that:
  - Is practical and implementable in the regulatory setting
  - Respects the legal and regulatory framework in which a regulator operates
- Handling uncertainty is not unique to drug regulation, and we included experts in other fields to better understand how they address this issue
- Day 2—Communicating uncertainty