

# Regulatory Studies Center

THE GEORGE WASHINGTON UNIVERSITY

## Quantifying Regulatory Efficacy

*OECD Workshop on Socioeconomic  
Impact Assessment of Chemicals  
Management*

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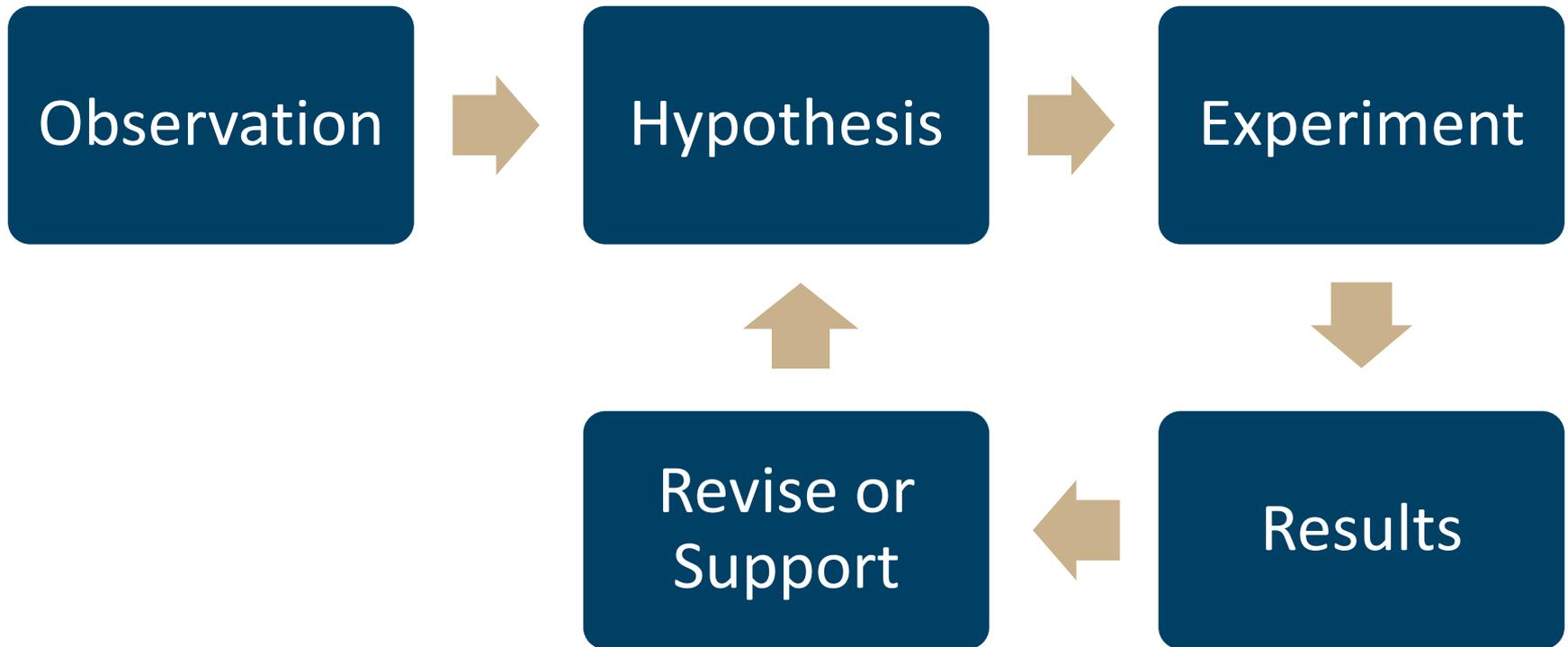
# Agenda

- Why evaluate efficacy of regulation?
- How does evaluation fit in the regulatory process?
- Why is evaluation so challenging?
- Methods for better regulatory evaluation
- Improving incentives for robust evaluation
- Discussion

# Why evaluate?

- Feedback is important
- Systems mindset
- Inform existing regulations
  - Delivering expected results?
  - Revise or rescind?
- Inform future regulations/policies
  - Improve ex ante analysis
  - Understand *causal* relationships

# Scientific method



# Regulatory process

- Regulatory impact assessment (ex ante)
  - Hypothesize causal links between action & outcome
  - Assess risks (models, assumptions)
  - Identify alternative actions to manage risks
  - Estimate benefits, costs & distributional effects
- Public engagement (ex ante)
- Implementation
- Ex post evaluation?

# Challenges

## Ex-ante analysis

- Well-established principles & procedures
- Challenging methodologically
  - Assumptions and models
  - Hypothesize outcomes

## Ex-post analysis

- Procedures less well-established
- Challenging methodologically
  - Counterfactual?
  - Opportunity costs?
  - Measuring actual reduction in risks
- Incentives lacking

# Responding to Methodological Challenges

- Plan for retrospective review at outset
- Design rules to allow natural experiments
- Lay out theory of change
- Determine proper scope
- Measure causal relationship

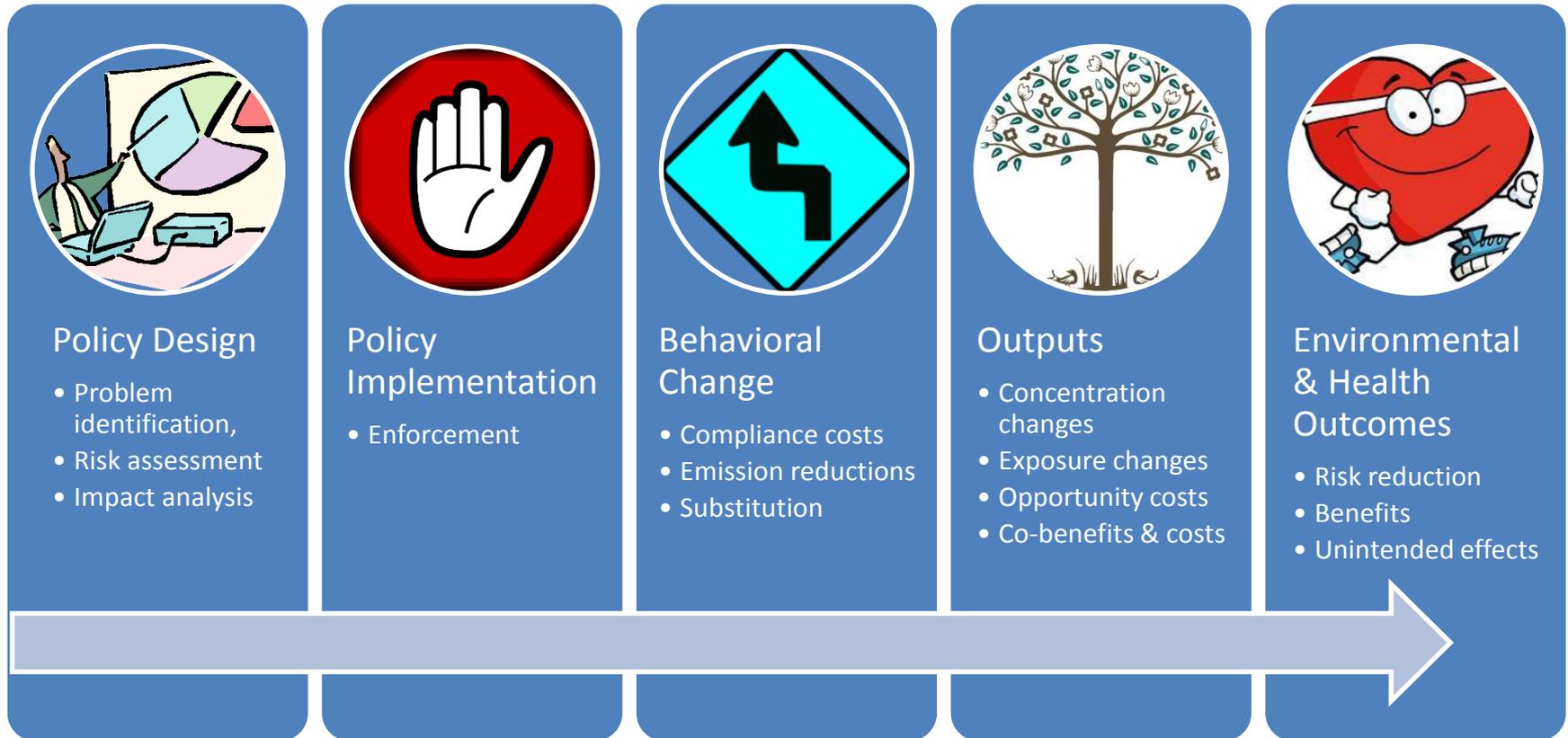
# Plan for review at the outset

- Problem to be solved
- Criteria for measuring success
- Causal logic model
- Time frame

# Design to enhance learning

- Randomized controlled experiment
- Variation facilitates natural experiments
  - Pilots or trials
  - Different compliance thresholds or timing
  - Differences across jurisdictions

# Illustrative Causal Model



# Scope

- Specific regulation vs. program-wide
- Outputs vs. outcomes
- Quantified benefits & costs
- Other factors
  - Innovation
  - Flexibility
  - Distribution

# Measure causal relationship

- Quasi-experimental approaches
  - Over time
  - Across jurisdictions
- Statistical tests
  - Is X informative about Y?
  - Does X precede Y?
  - Does  $\Delta X$  explain  $\Delta Y$ ?
  - What do non-parametric methods show?
  - Effect of X w/ other variables held constant

# Responding to Incentive Challenges

- Condition new regulation on ex post learning
- Institutionalize independent review
- Change default rules
- Reallocate resources

# Conclusions

- Evaluation & feedback important
  - Identify underperforming (or overly costly) rules
  - Improve future policy
    - Modify *ex ante* assumptions
    - Calibrate risk assessments
    - Improve causal predictions of health benefits & other regulatory effects
- Solutions must address methods & incentives

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