

Health Outcomes or Accountability Research

**Goal: Evaluating the effectiveness
of Air Quality regulations
in improving public health**

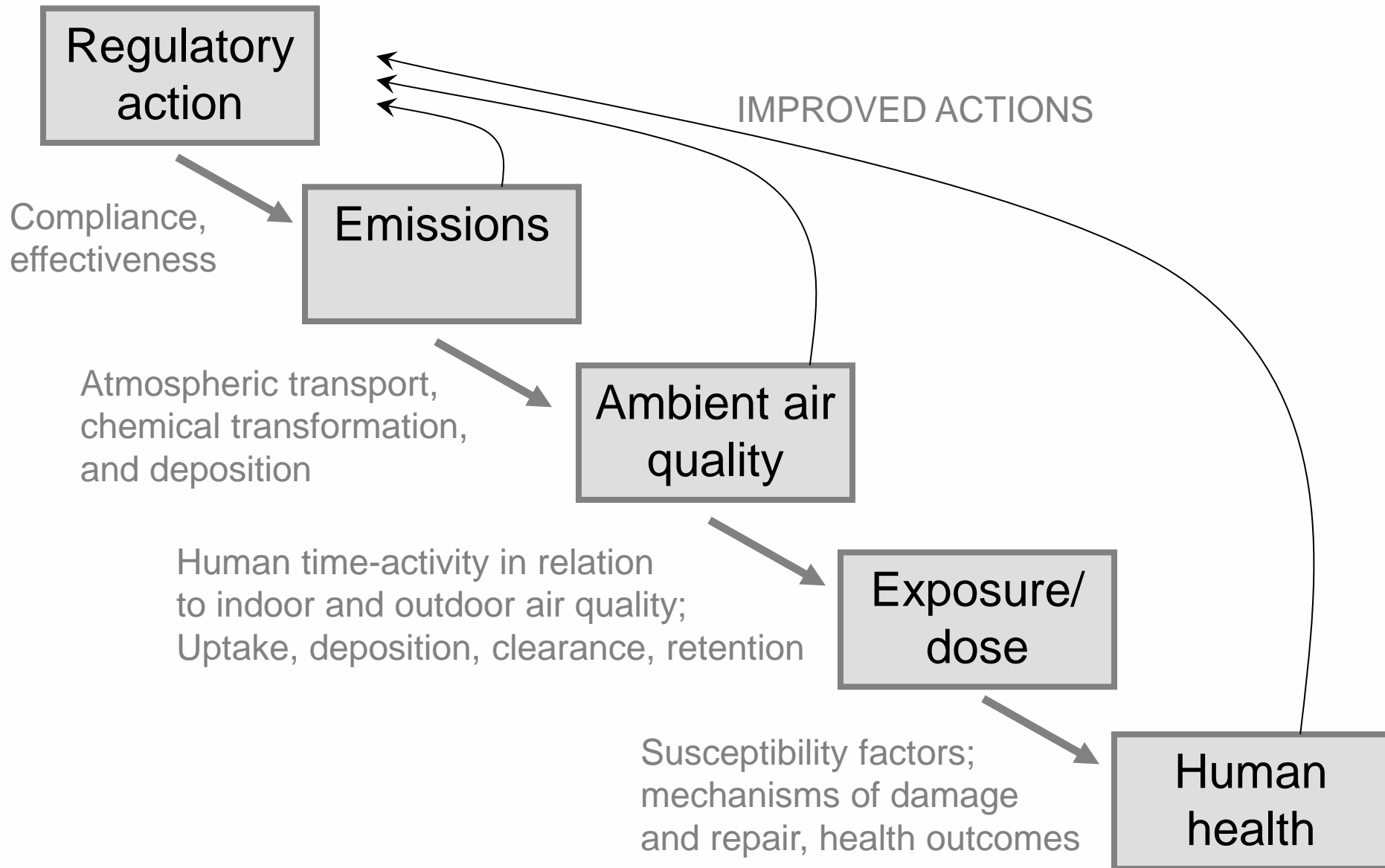


Why assess health impacts of environmental regulations?

- In North America and Western Europe, air quality (AQ) has improved substantially over the past decades
- Further improvements are becoming more costly
- Need to ensure that current and future regulations are achieving the intended public health benefits
- In addition to projected calculations of benefits, need to collect data on actual changes in AQ and health



Focusing the challenge on health: *The Chain of Accountability*



HEI's Accountability Program

- Concepts and methods (HEI Communication 11, 2003)
- Nine first-wave studies published
 - A majority were shorter-term studies of local interventions
- Interim program evaluation (HEI Communication 14, 2009)
- Further research planning (HEI Communication 15, 2010)
- Four second-wave studies funded:
 - Focus on longer-term, national / regional scale regulations
 - Frank Gilliland, Ying-Ying Meng, Ted Russell, Corwin Zigler / Francesca Dominici (*see posters*)



Frank Gilliland's HEI study

- Recent article by Gauderman et al., 2015
 - Association of improved air quality with lung development in children. N Engl J Med. 372(10):905-913.
- Based on the USC Children's Health Study designed and led by John Peters, and led by Jim Gauderman
- Frank Gilliland, PI of the HEI study
- Allowed an opportunity to follow several cohorts of children over two decades
- Covers a period of intensive air quality regulations in Southern California
- Focus on lung function growth and respiratory health

