

Preventive Services ToolKit

Module 3 – Epidemiology as a Policy Tool



Module 3 – Content

- Translating science to policy
- Epi Tools
- Syndemics
- Data Models
 - Medical
 - Public Health
 - Community



Health Policy Errors that Should Have Been Prevented

- Public Health
 - Tobacco policy legislation (ref harm reduction)
 - Interpretation of Louisiana Infant Mortality
- Disease Management
 - Untimely Demise of DM Programs
 - Unwillingness to stratify health ed and outreach
- (administrators and financial managers pay no attention to science if not forced to do so)



Science to Policy

□ Science

- Risk and causation
- Natural history
- Efficacy of interventions
- Secondary benefits and harms

□ Policy

- Planning
- Evaluation
- Advocacy strategy
- Who pays, who benefits
- Values and perceptions
- Types of costs
- Types of benefits
- Secondary gains and losses



Epi Approach to Translation

- ❑ Numerators
- ❑ Denominators
- ❑ Patterns of cause and effect
- ❑ Identify interventions and outcomes
- ❑ Time dimension
 - Project levels of intervention and outcomes by quarter and year
 - Enable mid-course corrections
- ❑ Data needs for evaluation
- ❑ Eliminate perception of squishiness



Direct Benefits

(diabetes health ed. in healthcare settings)

- ❑ Morbidity, mortality
- ❑ Healthcare costs averted



Indirect Benefits

(diabetes health ed. in healthcare settings)

- Adherence to recommendations
 - Diabetes
 - Other
- Lifestyle
- Satisfaction
- Reputation and competitive advantage



Adverse Consequences

(diabetes health education in healthcare settings as example)

- Costs
- Medical complications
- Adverse patient selection



Small Numbers as basis for decisions

- Research and Publication
 - $p < 0.05$
 - Increase sample size as needed to secure “statistical significance”
- Legal and Admin
 - “more likely than not” 51%
 - Proposed Public Health policy compromise $p < 0.2$
- **Cannot increase sample size to secure $p < 0.05$**



diabetes as example of Multiple levels of intervention

| Goal | Numerator | Denominator |
|-----------------------------------------|------------------------|------------------------|
| Decrease mortality | Deaths | Severely Ill Diabetics |
| Prevent deterioration and complications | Severely Ill Diabetics | All Diabetics |
| Prevent onset of diabetes | All Diabetics | Obese Patients |
| Prevent obesity | Obese Patients | Overweight Pts. |
| Prevent overweight | Overweight Pts. | All Patients |

Diabetes – Lessons Learned

- ❑ Primary, Secondary, Tertiary Prevention Model oversimplified
- ❑ 5 levels demonstrated
- ❑ (more levels if dealing with microvascular and other complications)
- ❑ **Must precisely define numerators, denominators, intervention(s) and outcomes**
- ❑ (best modeled with “stock and flow” software)



Syndemics

- “synergistic epidemics”
 - <http://www.cdc.gov/syndemics/overview-definition.htm>
- Community view



Examples of Syndemics

- Youth
 - STDs, AIDS, Substance Abuse, Unplanned or undesired pregnancy
- Elderly
 - Diabetes, metabolic syndrome, cardiovascular and cerebrovascular disease
- Urban inner city
 - Lead poisoning, asthma, interpersonal violence, depression, drug use, alcohol abuse
- Suburban sprawl
 - Obesity, poor physical fitness, auto accidents, depression, tobacco use



Bottom Line re: Epi as Policy Tool

- ❑ **Do not start with a literature review!!!**
- ❑ Start with Goal, feasibility, and Strategic plan
- ❑ Consider syndemic interactions
- ❑ Move to guidelines and literature summaries
 - Best place to start is usually the AHRQ National Guideline Clearinghouse
<http://www.guidelines.gov>
- ❑ Seek guidance and consultation from public health colleagues

