

Epidemiology in Health Policy, Regulation and Law

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Question

What are the best ways for epidemiology to inform laws, regulations, and policies to improve health?

- Seen from the epidemiologist's perspective
- Using four case studies
- American College of Epidemiology project

John Snow Cholera Research



Epidemiology

- Epi (upon) dem(people)
- **Epidemiology** is the study of factors affecting the health and illness of populations
- Randomized trials, prospective cohorts, case-control studies, cross-sectional surveys, population trends, maps and patterns, clinical series, case-reports and anecdotal data

Lessons in Brief

- Use the right mix of research
 - Epidemiology: effect of an exposure on health
 - Policy research: effects of policy itself, “natural experiments”
- Recognize constraints and costs
 - Possible health gains will be balanced against them
- Recognize that policy is politics
 - It ought to be
 - Legal, financial, cultural context dominates
- Study the process by which epidemiology affects policy
 - Conduct it, weight it, summarize or synthesize it
 - Expect to use teams with many disciplines

Childhood Obesity



<http://www.topnews.in/files/Michelle-Obama-ring4.jpg/>

<http://www.sbs.com.au/documentary/resize/index/id/1086/w/627/h/352/>

http://www.france24.com/en/files/imagecache/aef_ct_article_image/article/image/20100210-michelle-obesity-m_0.jpg

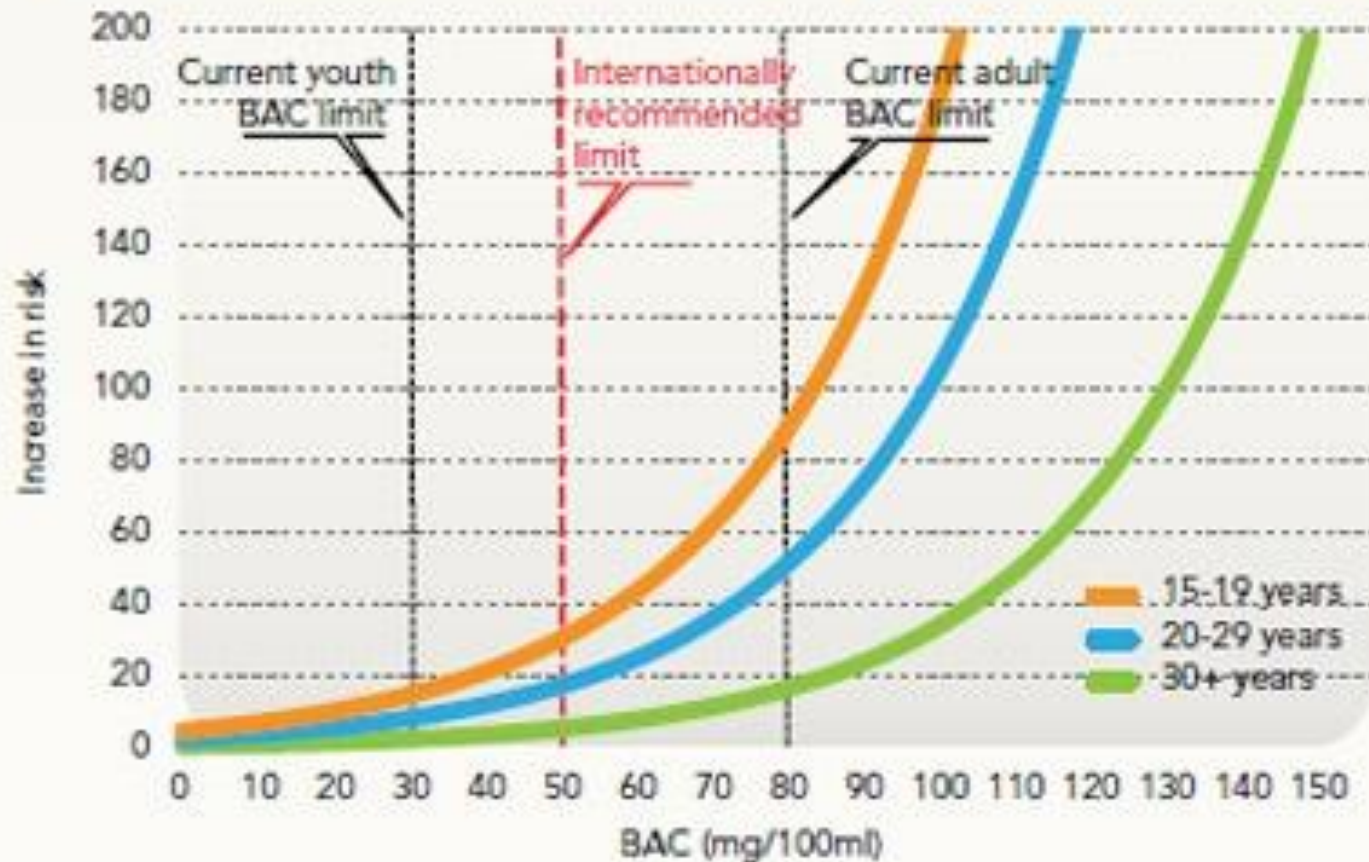
Physical Activity & Childhood Obesity

- Choosing the goal (“endpoints”)
 - Obesity
 - Energy intake
 - Physical activity
- The role of evidence
 - Acting with limited evidence, gathering more
 - Considering costs and benefits
 - Key analytic tools: systematic reviews
- The role of advocates

Blood Alcohol and Fatal Crashes



Figure 8: Relative risk of fatal crash by blood alcohol level



Lowering Blood Alcohol Limits

- Epidemiologic data shows the problem
 - Curves, continuous data always challenging
- Policy changes create natural experiments
 - Powerful evidence: lives saved
- Advocacy critical
 - Needs relevant evidence
 - Systematic reviews, expert opinions helped

Ban on Smoking in Bars



Secondhand Smoke Bans

- The importance of evidence on causation
 - The powerful role of critics
- When evidence does not motivate action
 - Understand the hurdles
 - Therefore: study the costs
- Persuasiveness of local data
- Policy evaluation, akin to epidemiology

Veterans Compensation



Compensation of Veterans for Injuries

- High-stakes decisions with multiple exposures
- Expert panel syntheses key
- Association or causation
- Populations or individuals
- Uncertainty and probability

Mammography Guidelines



Mammography Guidelines

- Long history or research and revision
- Intuitively, screening must help
 - Can epidemiologists explain it better?
 - Do we pull our punches on harms?
 - Could communications plan and timing have mattered?
- Strong constituencies, market forces






Over The Counter DNA Testing

NEWS | LOCAL BEAT

Over The Counter DNA Test Coming To a Walgreens Near You

By VICKY NGUYEN

Updated 6:34 AM PDT, Wed, May 12, 2010

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San Diego-based Pathway Genomics will start selling its "Insight" personal genetic testing kits in Walgreens nationwide this Friday.

Just spit and send. The kits cost \$20 to \$30. For another \$250, you can get a detailed report that shows whether you have the genetic markers for more than 70 different diseases, including Parkinson's

Over-the-Counter DNA Test

- Clarifying FDA role; diagnosis and risk prediction
- Scientific data on limited benefits accruing rapidly but...
- High public interest

Cell Phones and Brain Cancer



Cell Phones and Brain Cancer

- Body of evidence no effect
- Long-awaited additional data published
- Cultural context alters reactions
 - France: precautionary principle

President's Cancer Panel

- Basis of synthesis
- Body of evidence
- Evaluators

Cancer Panel: Chemicals 'Grossly Underestimated' as Carcinogens

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FILED UNDER: ENVIRONMENT, WOMAN UP, LOBBYING, MEDICINE

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Pat Sullivan, AP

Just as we're once again treated to the sight of volunteers scrubbing oil off wildfowl (ah, memories), along comes the President's Cancer Panel report that says we're being polluted to death.

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And I quote:
The "true
burden of

environmentally induced cancer has been grossly underestimated." According to the report, "more than 80,000 chemicals are in use, and 1,000-2,000 new chemicals are created and introduced into the environment each year." Only a few hundred have been tested for safety.

Says The Washington Post, "The current system places the burden on the government to prove that a chemical is unsafe before it can be removed from the market. The standards are so high, the government has been unable to ban chemicals such as asbestos, a widely

What to Expect Now

- More demand for impartial expert reviews
- Synthesis guidelines proliferating
- Epidemiologists revisiting policy impact