

## Health Research in Practice

1. Health research and environments: What is the connection
2. Evidence-based practice

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## 1. Health Research

### Why People Die, 2002 Figures

	US (CDC)	World (WHO)
1. Heart Disease	28.5%	12.4% (#1)
2. Cancer	22.8%	2.2% (#10, lung)
3. Stroke	6.7%	9.2% (#2)
4. Emphysema, chronic bronchitis	5.1%	4.5% (#5)
5. Accidents	4.4%	2.3% (#9, road)*
6. Diabetes	3.0%	
7. Flu & pneumonia	2.7%	6.9% (#3)
8. Alzheimer's/senility	2.4%	
9. Kidney disease	1.7%	
10. Septicemia/systemic infection	1.4%	
Other top 10 in the world: HIV/AIDS 5.3% (#4), perinatal (#6), diarrhea (#7), tuberculosis (#8)		

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## 1. Health Research

### Underlying Preventable Causes in US, 2000

- Tobacco 18.10%
- Poor diet and physical inactivity 16.60%
- Alcohol consumption 3.50%



Actual Causes of Death in the United States, 2000. A. Mokdad, J. Marks, D. Stroup, J. Gerberding, JAMA. 2004;291:1238-1245.

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## 1. Health Research

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## 1. Health Research

### DFH List of Multiple Health and Environment Connections

1. Accessibility
2. Air quality—respiratory illnesses
3. Climate change
4. Environmental and housing quality
5. Food access—e.g. nutrition, obesity
6. Healthcare access
7. Mental health—stress
8. Noise
9. Physical activity
10. Safety (crime & traffic)
11. Social capital
12. Water quality—water-borne diseases

- Special pops.: children, senior, low-income

### Brian Cole/UCLA "Pathways"

1. Land-use patterns
2. Air pollution
3. Community economics
4. Healthcare access / health insurance
5. Household economics
6. Housing
7. Noise pollution
8. Nutrition
9. Physical activity
10. Social capital

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## 1. Health Research

- How do you know how to make the connection between health and planning, policy, environments?



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## 2. Evidence-Based Practice

- New trend in medicine: “conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients/clients” Sackett, D.L. et al. (1996) Evidence based medicine: what it is and what it isn't. BMJ 312 (7023), 71-72
- Expanded beyond the individual e.g. business
- Needs careful assessment of research as there are often:
  - Few studies on a topic
  - Studies looking at only part of the picture
  - Studies that define key variables differently
  - Limitations to data and analysis
  - Publications bias—studies that find effects are more likely to be published than those that find no/inconclusive effects

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## 2. Evidence-Based Practice

### This is Hard to Do Yourself

- Medline is one of the major journal databases
- Type “urban” into Medline abstract > 74,130 journal articles
- Type “city” and get 50,809
- Type “rural” and get 65,252
- Type “urban planning” and get 109, some quite specialized e.g. “From nightlife conventions to daytime hidden agendas: dynamics of urban sexual territories in the South of France”
- Need for a guide to locate and assess studies



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## 2. Evidence-Based Practice

### Some Evidence is Better than Others

#### Good Evidence

- Evidence from dozens of studies converges on the finding that seeing green lowers stress and that some kinds of environments support travel walking

#### Conflicting Evidence or Evidence that Counters Common Beliefs

- It isn't clear that environments can increase **overall** physical activity (there are few studies that actually measure this—most look at one kind of PA) or that one type of environment is clearly better for social capital

#### Complicated Methods

- Some problems due to misuse of fancy statistics and differing definitions of key variables across studies.
  - E.g. high density in one study is low in another

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## Evidence: Air Quality

### Things for Certain (or semi-certain) About Air Quality

- Motor vehicles primary source of most fine and ultra fine particles
- Many pollutants decrease with distance from roadways
- Vehicle-related air pollution associated with higher levels of certain diseases
- Living above dry cleaners increases exposure to perchloroethylene
- Living near factories can increase risk of preterm birth, respiratory and other diseases
- Certain sub-groups are more vulnerable



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## Evidence: Air Quality

### Things Up In the Air About Air Quality

- Concentration of some pollutants does not decrease much with distance—but how much under what conditions
- Geographic scale of pollutants
- Establishing a recommended buffer distance is difficult
- Extent growing trees as buffers can mitigate pollution
- For **sources** and more see the research summary in your packet



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## Evidence: Social Capital

### Similar complexity in other areas:

- Different definitions of social capital
  - Homeownership is associated with higher social capital in some studies
    - In others living at high densities and in larger apartments increase social capital—likely due to different definitions of SC
  - Williamson (2004) in a study of 30,000 people in the US found more trust in low density areas, more political participation in high density areas
- Self selection may well be at work
  - **Example:** Podobnik (2002) found higher levels of perceived friendliness in a New Urbanist neighborhood, based on a survey of 1,180 people in three neighborhoods in Portland, Oregon.
    - However, many people living there selected the neighborhood because they preferred a more socially active environment

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## 2. Evidence-Based Practice

- There are resources for finding out about the links though some are more based in research and some in “commonsense” approaches
- There isn't a study about everything important
  - Sources for research summaries elsewhere in session
  - Also statistical information

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