Evidence-Based Public Health Practice: Using Research and Data to Improve Your Programs

Week 1: Introductions & Overview

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Workshop Agenda

- Week 1, Part 1- Introduction
  - How webinars work
  - Overview of evidence-based public health practice
  - Demonstration of blog
  - Review of EBPH site
  - Review CHARTing
  - Questions?

Workshop Agenda

- Week 1, Part 2 – Data Sources
  - Working with data sources
    - How to access
    - How to use
    - How to display
  - Using data sources for community assessments
    - *Healthy People 2010*

Workshop Agenda

- Week 2, Part 1 – Literature searches
  - Access to research literature
    - Guidelines
    - Systematic reviews
  - Online databases
    - How to search databases
    - Full text searches
    - Citation searches
    - Evaluation of articles

Workshop Agenda

- Week 2, Part 2 – Web resources
- Web resources
  - *MedlinePlus*
  - *ToxMap*
  - Partners in Information Access for the Public Health Workforce
- Questions
- Conclusion

What is evidence-based public health?

- Definitions
  - From Evidence-Based Medicine to Evidence-Based Public Health
    - Evidence-based public health is defined as the development, implementation, and evaluation of effective programs and policies in public health through application of principles of scientific reasoning, including systematic uses of data and information systems, and appropriate use of behavioral science theory and program planning models. (Brownson, Ross C., Elizabeth A. Baker, Terry L. Leet, and Kathleen N. Gillespie, Editors. *Evidence-Based Public Health*. New York: Oxford University Press, 2003.)

What is evidence-based public health?

- Definitions
  - E-Roadmap to Public Health Practice Concepts (New Hampshire Institute for Health Policy and Practice)
    - Developing, implementing, and evaluating public health programs or public health policies (in public health terms an "intervention") that have 1) data demonstrating their effectiveness and 2) a grounding in a health behavior theory or ecological model of health.

What is evidence-based public health?

- Many definitions
  - "The process of integrating science-based interventions with community preferences to improve the health of populations." (Kohatsu ND, Robinson JG, Torner JC. Evidence-based public health: An evolving concept. Am J Prev Med. 2004 Dec;27(5):417-21.)

Goal of evidence-based public health

- Improve community health
- Involve the community
  - Community-based participatory research
- Use research and data
- Don't forget what you already know

Steps for EBPH

1. Develop an initial statement of the issue
2. Quantify the issue
3. Research the issue
4. Develop program or policy options
5. Create an implementation plan
6. Evaluate the program or policy

O'Neall, M.A., & Brownson, R. C. (2005). Teaching evidence-based public health to public health practitioners. *Annals of Epidemiology, 15*(7), 540-544.

Step 1: Develop an initial statement of the issue

- What is the health issue?
- What are the forces that might shape this issue? Political? Personal? Social norms? Environmental?
- Who are key stakeholders?
  - Including community members
- What do you know in general about the problem?

Step 1: Develop an initial statement of the issue

- Use PICO (from EBM) to begin define question
  - P: Population
  - I: Intervention
  - C: Comparison
  - O: Outcome
- Use a logic model to begin your strategic planning
  - Inputs, activities, outputs, results (short & long term)
  - W.K. Kellogg Foundation Logic Model Development Guide
    - http://www.wkkf.org/Pubs/Tools/Evaluation/Pub3669.pdf
  - Logic model tutorials (CDC)
    - http://apps.nccd.cdc.gov/dashoet/logic_model_1/menu.html
    - http://apps.nccd.cdc.gov/dashoet/logic_model_2/index.html

Step 2: Quantify the Issue

- Public Health Surveillance
  - "..continuous and systematic process of collection, analysis, interpretation, and dissemination of descriptive information for monitoring health problems."[1]
  - "…for use in public health action to reduce morbidity and mortality and to improve health." [2]

[1]Buehler, J.W. (1998). Surveillance. In: Rothman KJ, Greenland S. *Modern epidemiology* (3rd ed., 435-57). Philadelphia, PA: Lippencott-Raven.
[2] Guidelines Working Group. (2001). Updated guidelines for evaluating public health surveillance systems. MMWR 50(RR13):1-35. Retrieved March 2, 2008 from: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm

Step 2: Quantify the Issue
Data Sources

- National Data from Federal Agencies
  - National Center for Education Statistics
  - National Center for Health Statistics
  - Bureau of Labor Statistics
  - Census Bureau
  - FBI
  - Housing & Urban Development
  - EPA
  - SAMHSA
  - NCI
  - Medicare/Medicaid
- State government agencies
- Non-profit organizations
- Colleges and universities
- Other research organizations

Step 2: Quantify the Issue
Information Systems

- Systems designed to store, organize, and retrieve data
- Standards based in some but not all cases
  - Internet protocols
  - PHIN (Public Health Information Network)
    - National initiative, improve capacity of PH to use and exchange information electronically
  - Electronic medical records
    - Vendor specific

Step 2: Quantify the Issue
Where do we stand?

- What do we track well?
  - Births & deaths
  - Infectious disease
  - Cancer
  - Population
- What don't we track well?
  - Chronic diseases
  - Linking certain types of conditions
    - Asthma & environment

Step 2: Quantify the Issue
Confidentiality

- Public data
  - County level typically
    - Census Bureau exceptions
- Hospital discharge data
  - IRB approval from state & home institution
    - TX charges for the data
- Surveys that you instigate
  - IRB approval from your institution?

Step 3: Use the Research

- Is there research related to your issue?
  - Your population?
  - Your disease?
  - Was it evaluated appropriately?
  - Is it theory-based?
    - Did they use the appropriate theory?
    - Theory at a Glance: A Guide for Health Promotion Practice

Step 3: Use the Research

- Types of resources available
  - Original research
  - Research syntheses
    - Systematic reviews & meta-analyses
  - Guidelines
  - Other?

Step 4: Develop program or policy options

- Review what you know about public health programs
- Determine criteria for to prioritize options
- Evaluate potential costs (cost-effectiveness and cost-benefit)

Step 5: Create an implementation plan

- Refine your description of the issue
- Go back to your logic model
  - Add inputs
  - Expand activities
  - Refine outcomes
- Which behavior theory most appropriate?
  - Theory at a Glance: A Guide for Health Promotion Practice
- Implement!

Step 6: Evaluate the program or policy

- Qualitative
  - Focus groups, town halls, neighborhood walk-throughs, surveys
- Quantitative
  - Just the facts!
  - Survey participants
    - Before and after
    - Use your health behavior theory to guide ? development
  - Look at health data trends from before program to after program
  - Decide if you discontinue or revise

Questions?

On to:

Next Week: Health data resources

Before then, please review:

CHARTing Health Information for Texas:
http://www.sph.uth.tmc.edu/charting

EBPH Blog
http://ebph.blogspot.com