Matas Instruction
Elaine R. Hicks, MSLIS, MPH, MCHES Public Health Librarian
March 10 and 12, 2015

Evidence-based Public Health:
What is it and how can you find it?

Rudolph Matas Library of the Health Sciences

2nd floor of Medical School: 1430 Tulane Avenue

This room in the 24/7 space has ARCGIS and SPSS
Objectives

• Distinguish EBPH from EBM
  – Process comparison
• State the need for EBPH
• Describe and locate key Elements of EBPH
  – Data for community assessment
  – Selecting evidence
    • Systematic reviews
    • Reports and recommendations
    • Evidence-based practice guidelines
    • Not all types of evidence (eg, qualitative research) are equally represented in Reviews and Guidelines
• Discuss the science of dissemination and implementation
The Evidence-based Decision-making Process

Integrates 1) best available research evidence, 2) practitioner expertise and other available resources, and 3) the characteristics, needs, values, and preferences of those who will be affected by the intervention.

So What is Evidence-Based Public Health?
Former definition (passive)

“development, implementation, and evaluation of public health programs through application of principles of scientific reasoning.”

New definition (active)

“the process of integrating science-based interventions with community preferences to improve the health of populations.”


# EBPH distinguished from EBM

<table>
<thead>
<tr>
<th></th>
<th>EBPH</th>
<th>EBM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Focus</strong></td>
<td>Populations</td>
<td>Individuals</td>
</tr>
<tr>
<td><strong>Emphasis</strong></td>
<td>• Prevention</td>
<td>• Diagnosis</td>
</tr>
<tr>
<td></td>
<td>• Health Promotion</td>
<td>• Treatment</td>
</tr>
<tr>
<td></td>
<td>• Whole Community</td>
<td>• Whole Patient</td>
</tr>
<tr>
<td><strong>Paradigm</strong></td>
<td>Interventions</td>
<td>Medical Care</td>
</tr>
<tr>
<td></td>
<td>• Environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Human Behavior and Lifestyle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Medical Care</td>
<td></td>
</tr>
<tr>
<td><strong>Organizational Lines</strong></td>
<td>Analytical (Epidemiology)</td>
<td>Organ (Cardiology)</td>
</tr>
<tr>
<td></td>
<td>• Setting and Population (Occupational Health)</td>
<td>• Patient Groups (Pediatrics)</td>
</tr>
</tbody>
</table>

## Processes comparison

<table>
<thead>
<tr>
<th></th>
<th>EBPH</th>
<th>EBM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State the scientific question</strong></td>
<td>Develop an initial statement of the issue via a community assessment</td>
<td>Convert the need for information into an answerable question</td>
</tr>
<tr>
<td><strong>Identify the relevant evidence</strong></td>
<td>Search scientific literature and organize information</td>
<td>Locate best evidence to answer the question</td>
</tr>
<tr>
<td><strong>Determine what information is relevant to answering the scientific question</strong></td>
<td>Quantify the issue using sources of existing data</td>
<td>Critically appraise the evidence for its validity (closeness to truth), impact (size of the effect), and applicability (usefulness in one’s clinical practice)</td>
</tr>
<tr>
<td><strong>Determine the best course of action considering the patient or population</strong></td>
<td>Develop and prioritize program options; develop an action plan and implement interventions</td>
<td>Integrate the critical appraisal with one’s clinical expertise and with the patient’s unique biology, values, and circumstances</td>
</tr>
<tr>
<td><strong>Evaluate process and outcome</strong></td>
<td>Evaluate program or policy</td>
<td>Evaluate one’s effectiveness and efficiency and seek improvement</td>
</tr>
</tbody>
</table>

The need for EBPH

• Decision making is messy
  – Complex inputs and group decision making
  – Study designs lack a comparison group, and interpretation of study results may have to account for multiple caveats
  – Interventions are seldom a single intervention and often involve large-scale environmental or policy changes that address the needs and balance the preferences of large, often diverse, groups of people

The need for EBPH

• Lack of formal training/multiple perspectives need to be considered in decision-making
  – Fewer than half of public health workers have formal training in a public health discipline such as epidemiology or health education (7).
  – No single credential or license certifies a public health practitioner
  – Voluntary credentialing has begun through the National Board of Public Health Examiners (6)
  – The multidisciplinary approach of public health is often a critical aspect of its successes, but this high level of heterogeneity also means that multiple perspectives must be considered in the decision-making process.

The need for EBPH

Barriers to practice

- Many public health interventions are implemented on the basis of political or media pressures, anecdotal evidence, or “the way it’s always been done”
- Barriers such as lack of funding, skilled personnel, incentives, and time, along with limited buy-in from leadership and elected officials, impede the practice of EBPH
- The wide-scale implementation of EBPH requires not only a workforce that understands and can implement EBPH efficiently but also sustained support from health department leaders, practitioners, and policy makers.


Key Elements of EBPH

- Engage the community in assessment and decision making
- Use data and information systems systematically
- Make decisions on the basis of the best available peer-reviewed evidence (both quantitative and qualitative)
- Apply program planning frameworks (often based in health behavior theory)
- Conduct sound evaluation
- Disseminate what is learned

Data for community assessment

- **Community Assessment**
  - identifies the health and resource needs, concerns, values, and assets of a community

- **Public health surveillance**
  - National surveillance sources
  - State health department websites
  - policy tracking and surveillance systems

- **Other data collection methods**
  - Telephone, mail, online, or face-to-face surveys
  - Community audits

- **Qualitative methods**
  - simple observation, interviews, focus groups, photovoice
Selecting evidence

• Scientific literature
  – identify programs and policies that have been effective in addressing needs identified in community assessments.

• Tools to identify the best available evidence
  – synthesize, interpret, and evaluate the literature
Systematic reviews

Use explicit methods to locate and critically appraise published literature in a specific field or topic area.
Reports and recommendations

Synthesize and summarize the effectiveness of particular interventions, treatments, or services and often include information about their applicability, costs, and implementation barriers.
Evidence-based practice guidelines

Systematic reviews of research-tested interventions and can help practitioners select interventions for implementation.
Not all types of evidence (eg, qualitative research) are equally represented in Reviews and Guidelines

- Original data and analysis
- PubMed
  - peer-reviewed research articles
  - free access to abstracts and some full-text articles
- Grey literature
  - government reports, book chapters, conference proceedings, and other materials not found in PubMed

http://libguides.tulane.edu/publichealth/ebp
The science of dissemination and implementation

Explores

– how to best integrate evidence-based interventions within clinical and community settings

– How to recast the nature or conduct of the research itself to make it more relevant and actionable
THANK YOU
AND
HAVE A GREAT SEMESTER

Please complete a short survey to help us improve our instruction

http://tulane.co1.qualtrics.com/SE/?SID=SV_ePdJnRodwp62Y4