
Evidence-based Practice: What does it mean? Why do we care?

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Outline

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A. What does it mean?

Well ...

A.1. EBP Background

- **What is health?** ... “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”
 - **World Health Organization**, Preamble to the Constitution as adopted by the International Health Conference, New York, 19 June - 22 July 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.
 - The definition has not been amended since 1948.

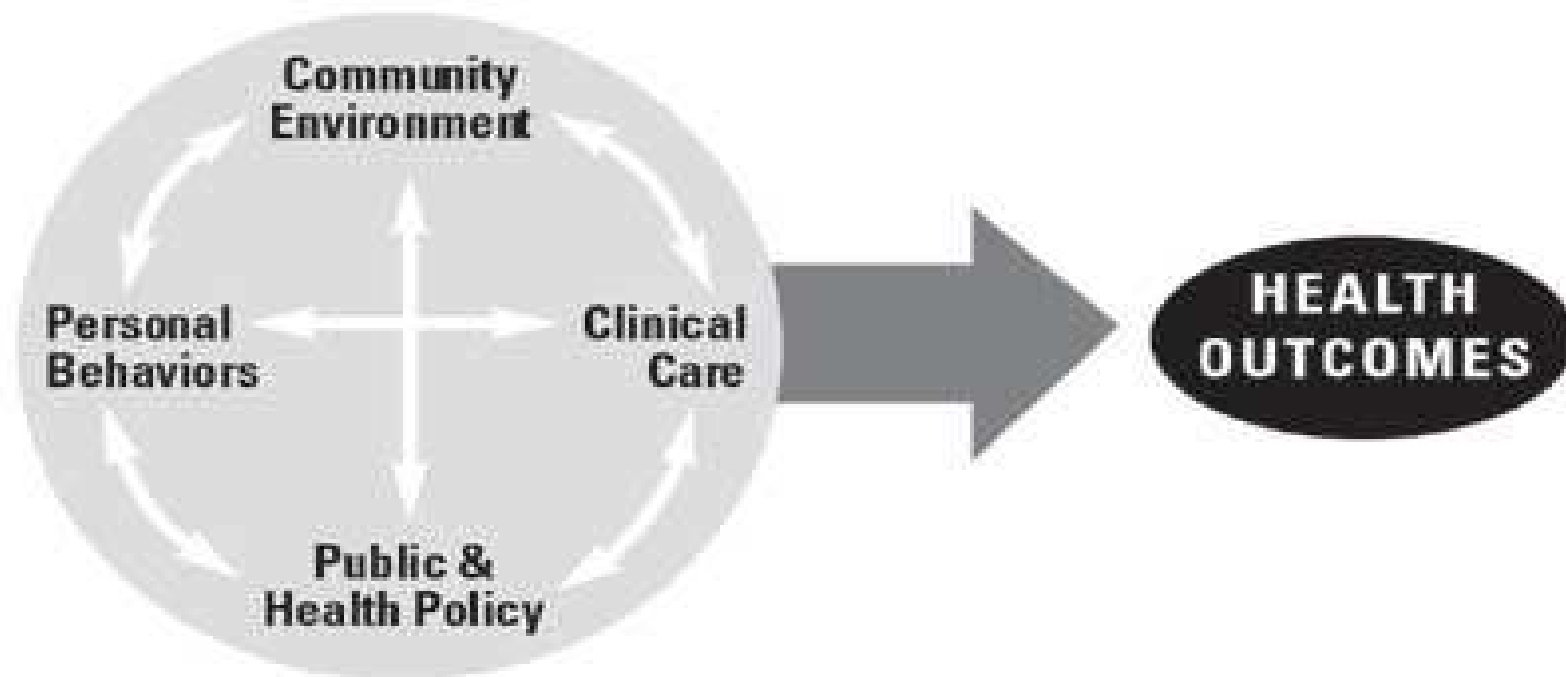
- www.who.int/en/

A.1. EBP Background

- “In addition to the contributions of our individual genetic predispositions to disease, health is the result of
 - ❑ personal behaviors,
 - ❑ environment of the community in which we live,
 - ❑ public and health policies and practices of our government,
 - ❑ clinical care we receive.”
- ❑ **United Health Foundation** *America's Health Rankings*TM 2007: A Call to Action for People and Their Communities.
- www.unitedhealthfoundation.org/ahr2007

A.1. EBP Background

Figure 1
Components of Health



A.1. EBP Background

- The **United Health Foundation** *America's Health Rankings*TM combine individual measures of each of these determinants with the resultant health outcomes into one comprehensive view of the health of a state.
 - Purpose is to stimulate action by individuals, communities, public health professionals, health industry employees and public administration and health officials to improve the health of the population of the United States.
 - For a state to improve the health of its population, efforts must focus on changing the determinants of health.
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A.1. EBP Background

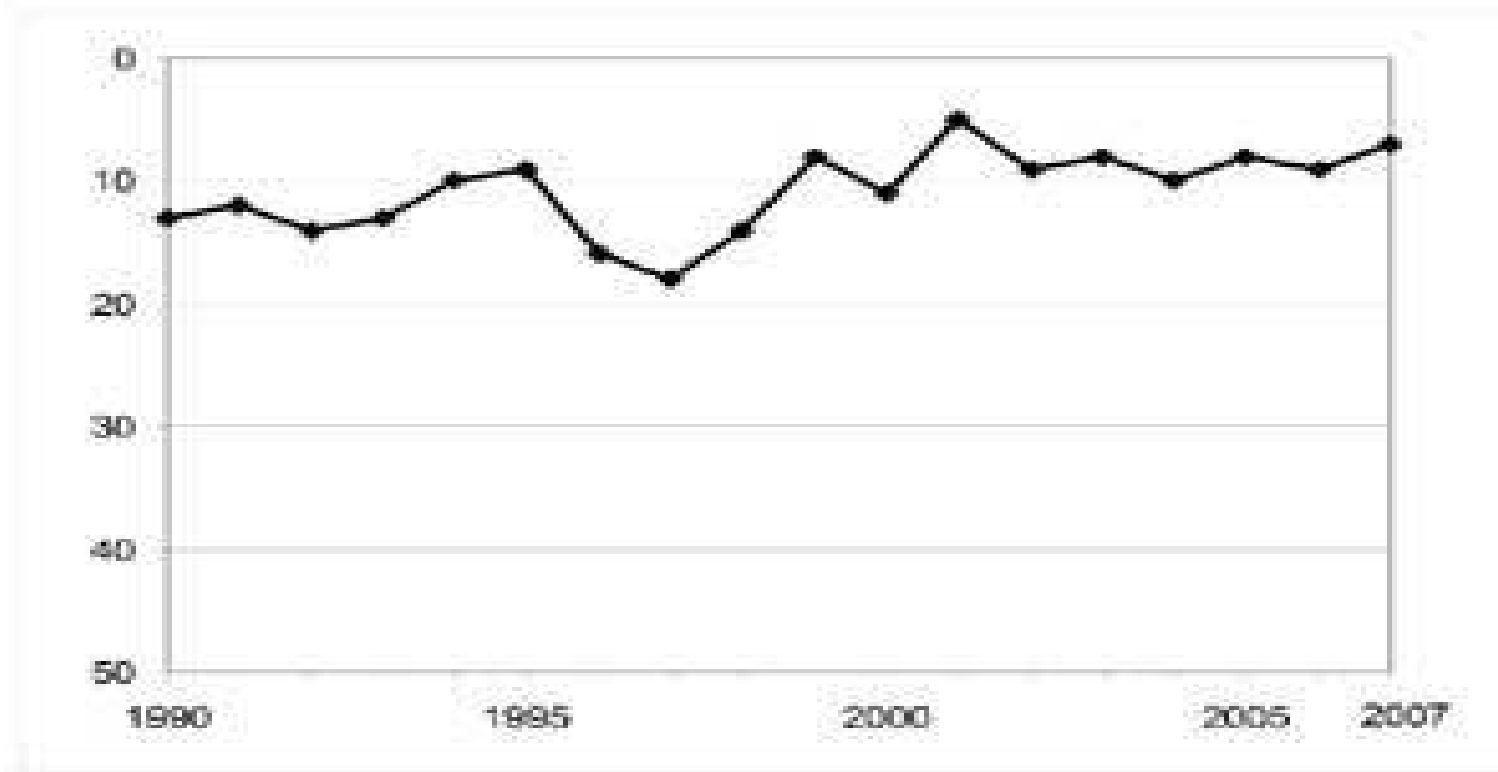
- *America's Health Rankings*TM health determinants (n=15):
 - **Personal Behaviors:** Prevalence of Smoking, Violent Crime, Binge Drinking, High School Graduation, Prevalence of Obesity
 - **Community Environment:** Violent Crime, Occupational Fatalities, Infectious Disease, Children in Poverty
 - **Public and Health Policy:** Lack of Health Insurance, Per Capita Public Health Spending, Immunization Coverage
 - **Health Services:** Adequacy of Prenatal Care, Primary Care Physicians, Preventable Hospitalizations

A.1. EBP Background

- *America's Health Rankings*TM health outcomes (n=6):
 - ❑ Poor Mental Health Days
 - ❑ Poor Physical Health Days
 - ❑ Infant Mortality
 - ❑ Cardiovascular Deaths
 - ❑ Cancer Deaths
 - ❑ Premature Death

A.1. EBP Background

- *America's Health Rankings*TM for Maine: 7th in 2007 (9th in 2006)



A.1. EBP Background

	2007	2006	2000	1990
Some DETERMINANTS (Personal Behaviors)	Rank	Rank	Rank	Rank
Prevalence of Smoking (Percent of population)	29	28	29	28
Prevalence of Obesity (Percent of population)	14	14	24	31
All Determinants	5	4	10	14
Some HEALTH OUTCOMES				
Poor Physical Health Days (Days in previous 30 days)	35	42	37	---
Cardiovascular Deaths (Deaths per 100,000 population)	6	5	25	31
Cancer Deaths (Deaths per 100,000 population)	39	45	36	46
All Health Outcomes	23	24	9	15

A.1. EBP Background

- Maine strengths:
 - ❑ low violent crime rate at 116 offenses per 100,000 population,
 - ❑ ready access to adequate prenatal care with 85.3 percent of pregnant women receiving adequate prenatal care,
 - ❑ low rate of cardiovascular deaths at 264.8 deaths per 100,000 population,
 - ❑ low rate of uninsured population at 9.3 percent.

A.1. EBP Background

- Maine challenges:

- high rate of cancer deaths at 211.7 deaths per 100,000 population,
- many poor physical health days per month at 3.6 days in the previous 30 days
- low immunization coverage with 79.8 percent of children ages 19 to 35 months receiving complete immunizations.

A.1. EBP Background

- ↓ In the past year, the rate of uninsured population decreased from 10.3 percent to 9.3 percent and the percentage of children in poverty decreased from 15.8 percent to 13.2 percent of persons under age 18.
- ↓ Since 1990, the prevalence of smoking declined from 30.3 percent to 20.9 percent of the population and the incidence of infectious disease decreased from 16.3 to 6.5 cases per 100,000 population.
- Disparities: but blacks experience 17 percent more premature death than whites.

A.1. EBP Background

- Good news:
 - If a state is significantly better in its ranking for health determinants than its ranking for health outcomes (as Maine is), it will be more likely to improve its overall health ranking in the future.
 - Maine ranks higher for health determinants than for health outcomes, indicating that overall healthiness should improve over time.

A.2. EBP Definition

- **Evidence-based practice** is the integration of best research evidence with clinical expertise and patient values.
 - Sackett, David L., Sharon E. Straus, W. Scott Richardson, et al. Evidence-Based Medicine: How to Practice & Teach EBM. 2nd edition. London, England: Churchill Livingstone, 2000.
 - **Adapted to community health:** Evidence-based practice is the integration of best research evidence with health promotion/disease, accident, and injury prevention expertise and community values.
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A.3. Origin: Wennberg 1973

- **Wennberg JE and Gittelsohn.** Small area variations in health care delivery. *Science*. 1973 Dec 14;182(117):1102-8:
 - **Variation:** Experience with a population-based health data system in Vermont reveals that there are wide variations in resource input, utilization of services, and expenditures among neighboring communities.
 - **Inequity:** Results show prima facie inequalities in the input of resources that are associated with income transfer from areas of lower expenditure to areas of higher expenditure.
 - **Ineffectiveness:** Variations in utilization indicate that there is considerable uncertainty about the effectiveness of different levels of aggregate, as well as specific, kinds of health services.
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A.4. Benchmark: Cochrane 1992

- **The Cochrane Collaboration** started in 1992 Oxford, England.
 - international network of health care professionals, researchers, and consumers that develops and maintains regularly updated reviews of evidence from randomized controlled trials and other research studies ... currently comprises about 50 Collaborative Review Groups.
- www.cochrane.org

A.4. Benchmark: Cochrane 1992

- **The Cochrane Collaboration**
 - ❑ maintains the *Cochrane Library*, a collection of databases that is updated quarterly and distributed annually to subscribers.
 - ❑ *The Cochrane Database of Systematic Reviews* contains Cochrane reviews, and another, *The Cochrane Controlled Trials Register*, is a bibliographic database of controlled trials.

A.4. Benchmark: AHRQ 1997

- **Agency for Healthcare Research and Quality** (US DHHS) started Evidence-Based Practice Centers program in 1997.
 - EPCs develop evidence reports and technology assessments on topics relevant to clinical, social science/behavioral, economic, and other health care organization and delivery issues—specifically those that are common, expensive, and/or significant for the Medicare and Medicaid populations.
- www.ahrq.gov/clinic/epc/

A.4. Benchmark: AHRQ 1997

- **Agency for Healthcare Research and Quality: EPCs** are located at
 - Blue Cross and Blue Shield Association, Technology Evaluation Center; Duke University; ECRI; Johns Hopkins University; McMaster University; Oregon; RTI International—University of North Carolina; Southern California; Stanford University—UCSF; Tufts—New England Medical Center; University of Alberta; University of Connecticut; University of Minnesota; University of Ottawa; Vanderbilt University.
- www.ahrq.gov/clinic/epc/

A.4. Benchmark: CDC 2001

- **Centers for Disease Control and Prevention** (US DHHS) first published the “*Guide to Community Preventive Services: Systematic Reviews and Evidence-Based Recommendations*” in 2001. The Guide
 - represents a significant national effort in encouraging evidence-based public health practice in defined populations, e.g., communities....
 - makes recommendations regarding public health interventions to reduce illness, disability, premature death, and environmental hazards that impair community health and quality of life.
- <http://thecommunityguide.org/>

A.4. Benchmark: CDC 2001

- Guide to Community Preventive Services topics:
 - Alcohol, Cancer
 - Diabetes, Mental Health
 - Motor Vehicle, Nutrition
 - Obesity, Oral Health,
 - Physical Activity, Pregnancy
 - Sexual Behavior, Social Environment
 - Tobacco, Vaccines
 - Violence, Worksite

A.4. Benchmark: CDC 2001

- **Guide to Community Preventive Services users:**
 - **Public Health Professionals**: What works to promote health and what still needs more research.
 - **Legislators and Policy Makers**: Unbiased, evidence-based findings about legal and policy options.
 - **Community-based Organizations**: Improve the health of your community.
 - **Providers of Health Care Services**: Increase delivery of effective preventive services.
 - **Researchers**: What needs more research and ways to improve the quality of the research.
 - **Employers and Other Purchasers of Health Care Services**: How to enhance employee health efficiently.

A.4. Benchmark: CDC 2001

- **e.g. Physical Activity:** The Guide's systematic reviews of the effectiveness of selected population-based interventions designed to increase levels of physical activity are focused on interventions in:
 1. Informational approaches to increasing physical activity.
 2. Behavioral and social approaches to increasing physical activity.
 3. Environmental and policy approaches to increasing physical activity.
 - Selected interventions are reviewed and scored Recommended, Insufficient Evidence, Recommended Against
 - <http://thecommunityguide.org/pa/default.htm>
-

A.4. Benchmark: CDC 2001

- **e.g. Nutrition:** The Guide's systematic reviews of the effectiveness of selected population-based interventions addressing nutrition focus on:
 - School-based nutrition programs
- Selected interventions are reviewed and scored Recommended, Insufficient Evidence, Recommended Against
- <http://thecommunityguide.org/nutrition/default.htm>

A.4. Benchmark: CDC 2001

- **e.g. Obesity:** The Guide's systematic reviews of the effectiveness of selected population-based interventions aimed at promoting healthy growth and development in children and adolescents and support healthy weights among adults focused on:
 1. School-based interventions for children and adolescents
 2. Worksite interventions aimed at diet, physical activity, and cognitive change
 - Selected interventions are reviewed and scored Recommended, Insufficient Evidence, Recommended Against
 - <http://thecommunityguide.org/obese/default.htm>
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B. Why do we care?

Well ...

B.1. Say you were considering ...

- a community-level women's cancer prevention intervention targeting working-age smoking adults who live in low-SES neighborhoods where a) smoking prevalence is higher than average and b) health literacy is lower than average. Rationale: adult secondary prevention, child primary prevention.
 - Wouldn't a systematic review of the evidence concerning what had and what had not proven effective to date be valuable?
- Here's where AHRQ might come in: www.ahrq.gov/

B.2. AHRQ EBP Program Reports

- Among "Completed Reports" you review at www.ahrq.gov/clinic/epcix.htm, you might access:
 1. **Report no. 79.** Cancer Control Interventions
www.ahrq.gov/clinic/tp/cancontp.htm
 2. **Report no. 87.** Literacy and Health Outcomes
www.ahrq.gov/clinic/tp/littp.htm
 3. **Report no. 99.** Community-Based Participatory Research
www.ahrq.gov/clinic/tp/cbprtp.htm
 4. **Report no. 101.** Economic Incentives
www.ahrq.gov/clinic/tp/ecinctp.htm
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B.2. AHRQ EBP Program Reports

- You'd begin at "Structured Abstract" e.g. for Report no. 79. Cancer Control Interventions, and review its:
 - Questions
 - Data Sources
 - Data Extraction
 - Main Results
 - Conclusion
- Then, as warranted, you'd download the full Report *Diffusion and Dissemination of Evidence-based Cancer Control Interventions* for guidance on Do's and Don't's
 - Summary (Publication No. 03-E032).
 - Evidence Report (Publication No. 03-E033).

B.2. Report 79. Cancer Control Interventions

■ Relevant Results

- **Adult Smoking Cessation:** effective smoking cessation interventions included brief advice by a healthcare professional, office prompts, media campaigns, and office reminders combined with physician training with or without patient education. No strong evidence currently exists for effective dissemination studies.

B.2. Report 79. Cancer Control Interventions

■ Relevant Results (cont)

- ❑ **Mammography:** Effective interventions included invitations or mailed reminders, office system interventions, and financial barriers interventions. Insufficient evidence exists for the effectiveness of any dissemination strategy.
- ❑ **Cervical Cancer Screening:** Effective interventions included office systems and invitations and reminders to individuals. Limited evidence supports the effectiveness of educational materials, telephone counseling, removal of financial barriers, media campaigns, and healthcare provider advice. No evidence exists for dissemination strategies.

B.2. Report 87. Literacy and Health Outcomes

- **Context:** More than 90 million adults in the United States have poor literacy [and] are believed to have greater difficulty navigating the health care system and to be at risk of experiencing poorer health outcomes.
 - **Key Question 1:** Are literacy skills related to: a) Use of health care services? b) Health outcomes? c) Costs of health care? d) Disparities in health outcomes or health care service use according to race, ethnicity, culture, or age?
 - **Key Question 2:** For individuals with low literacy skills, what are effective interventions to: a) Improve use of health care services? b) Improve health outcomes? c) Affect the costs of health care? d) Improve health outcomes and/or health care service use among different racial, ethnic, cultural, or age groups?

B.2. Report 87. Literacy and Health Outcomes

■ Relevant Results

- ❑ Studies examining the relationship between low literacy and adverse health outcomes generally found that patients with low literacy had poorer health outcomes, including knowledge, intermediate disease markers, measures of morbidity, general health status, and use of health resources. For Q2, most interventions led to improved outcomes, particularly for outcomes of understanding or knowledge. Fewer studies examined the effect of interventions for patients with low health literacy on morbidity and mortality.

B.2. Report 87. Literacy and Health Outcomes

■ Conclusions

- ❑ Low literacy is associated with several adverse health outcomes, including low health knowledge, increased incidence of chronic illness, poorer intermediate disease markers, and less than optimal use of preventive health services. Interventions to mitigate the effects of low literacy have been studied, and some have shown promise for improving patient health and receipt of health care services.

B.2. Report 99. Community-Based Participatory Research

- **Key Questions:** The researchers addressed the following key questions (KQs): What defines CBPR? How has CBPR been implemented to date with regard to the quality of research methodology and community involvement? What is the evidence that CBPR efforts have resulted in the intended outcomes? What criteria and processes should be used for review of CBPR in grant proposals?
- **Relevant Results:** ... Steering committees or advisory boards were the main mechanisms for sharing research decision making, but these did not generally develop research questions or proposals.

B.2. Report 101. Economic Incentives

- **Objectives:** A systematic review of the literature was undertaken to address four questions: How have "preventive care" and "economic incentive" been defined in the literature? Do incentives work? Is there evidence of a dose/response curve? What is the evidence for cost-effectiveness of economic incentive interventions?
 - **Relevant Conclusions:** ... There is little evidence to support the idea that provider financial incentives, particularly of the modest and artificial nature that were evaluated in the studies, are effective. Further, it appears bonuses do not work simply and easily.
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B.2. Report 101. Economic Incentives

■ Relevant Conclusions (cont)

- ❑ In the short run, consumer economic incentives are effective for simple preventive care and well-defined behavioral goals. There isn't sufficient evidence that economic incentives are effective for promoting long-term lifestyle changes.
- ❑ There is no evidence for a dose response for provider incentives, although one may assume that a sizable enough incentive should produce the desired behavior, if at a high cost.
- ❑ There is a possible dose response for consumer incentives. Even more interesting for consumer incentives is the effectiveness of relatively modest incentives.

B.2. AHRQ EBP Program Reports

- From your review of **Reports 79, 87, 99, 101**, you might consider a program intervention which is:
 - **community-sponsored**: an advisory board is directly involved with program team in designing, implementing, and evaluating the intervention, not in developing program proposal,
 - **practice-based**: sites include MD, RN, and non-MD/RN (e.g. chiropractic) practices prepared to deliver literacy-screened and actionable knowledge and information components,

B.2. AHRQ EBP Program Reports

- From your review of **Reports 79, 87, 99, 101**, you might consider a program intervention which is:
 - ❑ **twin-component:** practice-provided literacy-screened knowledge and information on 1) smoking health consequences and cessation resources (community Quit Line, hospital Quit Programs) and 2) community physical exercise (Curves, local gyms); no practice site intervention beyond precisely imparted knowledge and information,
 - ❑ **incented:** by combined free mammography and cervical cancer screening and discounted gym membership; providers incented by community recognition alone.

B.3. Where to?

- Why, to the 10-11:30am Skill-Building session of course! focused on:
 - Preventing Childhood Overweight (ADA)
 - Adult Physical Activity (CDC)