The Role of Evidence-Based Strategies in Public Health

Chapter 2

Public health is the science of protecting and improving the health of communities through education, promotion of healthy lifestyles, and research that furthers the prevention of disease and injury. Public health practitioners are concerned with the health and well-being of the entire population, in addition to addressing the health care needs of the individual people they serve. In North Carolina the Division of Public Health (DPH), within the Department of Health and Human Services, as well as local health departments (LHDs) are charged with "promot[ing] and contribut[ing] to the highest level of health possible for the people of North Carolina.[a]"

Public health is the science of protecting and improving the health of communities through education, promotion of healthy lifestyles, and research that furthers the prevention of disease and injury.

To fulfill this mission, LHDs are tasked with preventing health risks and disease; identifying and reducing health risks in the community; detecting, investigating, and preventing the spread of disease; promoting healthy lifestyles; promoting a safe and healthful environment; promoting the availability and accessibility of quality health care services through the private sector; and providing quality health care services when not otherwise available.

Local health departments must fulfill this mission, often with access to only the most limited of federal, state, and local resources. Specficially, LHDs are tasked with the following services and supports:

1. Preventing and reducing health risks and disease by developing policies and plans that support individual and community health efforts.
2. Monitoring the health status of the community in order to identify areas of concern.
3. Detecting, investigating, and preventing the spread of disease.
4. Promoting healthy lifestyles by informing, educating, and empowering citizens about health issues.
5. Promoting a safe and healthful environment.
6. Promoting the availability and accessibility of quality health care services through the private sector and assuring the provision of health care when not otherwise available.
7. Mobilizing community partnerships to identify and solve health problems.
8. Enforcing laws and regulations that protect health and ensure safety.

a NCGA 130A-1.1(b), Session Law 2012-126

9. Assuring a competent public health workforce and personal health care workforce.
10. Evaluating effectiveness, accessibility, and quality of personal and population-based health services.
11. Conducting research.

The mission to improve public health, the charge to provide a wide array of services to improve health, and the reality of limited financial resources means that public health practitioners must find ways to optimize the impact of their work. Evidence-based public health is one way to do this. Evidence-based public health is the practice of incorporating scientific evidence about what works into management decisions, program implementation, clinical services, and policy development.[1]

Using evidence-based practices in public health yields many benefits including increasing the likelihood that programs, clinical interventions, and policies implemented at the state or local level will be successful, and increasing the efficiency of public resources.

The use of research and evidence in informing public health decision making is gaining momentum across federal, state, and local public health agencies. Although there are challenges related to translating research into public health practice, the necessity for and benefits of using evidence-based interventions and policies are clear. Using evidence-based practices in public health yields many benefits including increasing the likelihood that programs, clinical interventions, and policies implemented at the state or local level will be successful, and increasing the efficiency of public resources.[2] Using evidence to inform practice can help practitioners avoid implementing programs and policies deemed ineffective or harmful. Ultimately, the state and LHDs have limited resources to meet broad missions and are required to account for the funds they spend.[b] Therefore, investing these limited resources in programs, clinical treatments, and policies that have proven results makes sound economic sense.

While implementing evidence-based strategies (EBSs) in public health is an appealing concept, there are challenges and barriers that DPH and LHDs face in trying to increase the use of EBSs. Because establishing a practice as an evidence-based strategy depends on rigorous research, establishing EBSs for a given public health issue can take many years. Although there has been tremendous expansion in the public health research base in recent years, there are still important public health issues that require action but lack informative research. Additionally, determining what is and is not an EBS can be a complicated process given varying definitions of EBSs and differences in evaluation methods. EBSs may require higher initial and on-going funding and resources compared to other non-EBSs. Furthermore, EBSs frequently require staff to have competencies in effective implementation strategies. So while there are distinct benefits to utilizing EBSs in public health practices, there are also many challenges that must be overcome. (See Chapter 3.)

b NCGA 130A-1.1(b), Session Law 2012-126

Defining Evidence-Based Public Health

Although researchers agree that evidence-based strategies should produce positive outcomes when replicated accurately and adequately, wide variation exists among what researchers and practitioners actually define as "evidence-based." This variation is due to intervention type differences (e.g. program, clinical, and policy) and is based on the research methods used to make evidence-based determinations. Evidence-based evaluation criteria may include the design, number, and quality of studies; effect size; reach; feasibility; sustainability; transferability; and consideration of other expert review/opinion among others. Additionally, at the federal and state level there is a lack of agreement as to what constitutes an EBS. Because of these definitional differences and a lack of federal and state agreement, it is often difficult for organizations interested in implementing EBSs to determine which strategies or interventions are actually "evidence-based."

Evidence-based strategies should produce positive outcomes when replicated accurately and adequately.

At the federal level, the US Preventive Services Task Force and the Community Preventive Services Task Force are tasked with making evidence-based recommendations about clinical preventive services in a primary care setting and community preventive services, programs, and policies, respectively. While both were created by federal bodies, they are independent, nonfederal, unpaid task forces. The US Preventive Services Task Force covers more than 50 topics including many types of cancer, immunizations, alcohol and tobacco use, blood pressure, and depression.[3] The Community Preventive Services Task Force has guides for more than 20 topics including adolescent health, diabetes, nutrition, social health, and worksite wellness.[4] The two task forces use similar processes to develop recommendations around a given topic. They identify all relevant studies, assess their quality, assess the benefits and harms of the intervention, summarize the evidence, and assign a grade or rating to the evidence.[5,6] The US Preventive Services Task Force uses five letter grades while the Community Preventive Services Task Force uses three categories: recommended, recommended against, and insufficient evidence. A clinical preventive service assigned an "A" by the US Preventive Services Task Force is recommended by the Task Force because "there is high certainty that the net benefit is substantial.[7]" For a service, program, or policy to be recommended by the Community Preventive Services Task Force indicates that a "systematic review of available studies provides strong or sufficient evidence that the intervention is effective.[8]" The registries of services developed by these two task forces are discussed further in Chapter 3. In addition to the work of these two task forces at the federal level, there are other federal and state agencies, academic institutions, and nonprofit organizations that have developed definitions, registries, and other resources around defining and identifying evidence-based services. (See Chapter 3 and Appendix B.)

When beginning their work, the NCIOM Task Force on Implementing Evidence-Based Strategies in Public Health began with a discussion of how to define evidence-based strategies. The Task Force started with the "gold standard"

definition that defines evidence-based strategies as those that have been subject to rigorous evaluation and have been shown to achieve positive outcomes in multiple settings, often with diverse populations (equivalent to the US Preventive Services Task Force's "A" grade or the Community Preventive Services Task Force's "recommended" category). While this is the level of services the NCIOM Task Force hopes to see implemented in all of North Carolina's LHDs over time, they struggled with limiting their definition to such strict guidelines.

The Task Force adopted a broad definition of evidence-based strategies.

Given that LHDs have different resources and are at various stages in moving towards implementing EBSs, the Task Force wanted to adopt a definition that encouraged a dialogue about how to move everyone forward. They wanted to use a definition that was more representative of what is happening in public health in North Carolina—a definition that included the broader continuum of evidence-based strategies, all the way from emerging strategies to gold standard strategies. The Centers for Disease Control (CDC) and Prevention's Best Practices Workgroup has developed a continuum of evidence-based practices that includes four levels of practices. (See Table 2.1.) On one end, "emerging" practices are supported by only initial evidence (e.g. evaluations in-progress, or field-based summaries). On the other end, "best" or "proven" practices are supported by evidence from systematic review.

Table 2.1
Evidence-Based Strategies Continuum

Best (B), Proven, or EBP: These practices are supported by intervention evaluations or studies with rigorous systematic review that have evidence of effectiveness, reach, feasibility, sustainability, and transferability.
Leading (L): These practices are supported by intervention evaluations or studies with peer review of practice that have evidence of effectiveness, reach, feasibility, sustainability, and transferability.
Promising (P): These practices are supported by intervention evaluations without peer review of practice or publication that have evidence of effectiveness, reach, feasibility, sustainability, and transferability.
Emerging (E): These practices are supported by field-based summaries or evaluations in progress that have plausible evidence of effectiveness, reach, feasibility, sustainability, and transferability.

Source: Adopted from the Centers for Disease Control and Prevention Best Practices Workgroup

The Task Force agreed that moving public health efforts towards strategies that are most effective (best and leading) is the ultimate goal. The Task Force felt that this continuum provides a broad enough definition that all LHDs can see themselves and the work they are doing as part of this continuum. This continuum model illustrates how LHDs and other organizations can move forward, even if incrementally, towards adopting higher levels of evidence-based strategies. This broad definition aligns well with the current state of public health practice in North Carolina and the nation while at the same time encouraging movement towards practices in the best or leading categories. Therefore, the Task Force decided to embrace the full continuum as their definition of evidence-based strategies; however, policies, programs, and clinical interventions that achieve the higher levels of evidence (best and leading) were prioritized. (See Chapter 5.)

Evidence-Based Public Health in North Carolina

In North Carolina, DPH and LHDs are currently implementing both EBSs and non-EBSs. However the goal is to increasingly move efforts towards EBSs, where possible. LHDs are already implementing many strategies and interventions which meet criteria across the four CDC EBS levels. This broad definition is inclusive of those efforts. Nonetheless, as will be discussed further in Chapter 5, the Task Force's goal is to move toward and expand the usage of those EBSs which are supported by the highest levels of evidence (best or leading). This relatively wide definition of EBSs also allows local health departments to utilize all federal and federally-supported EBS registries (see Chapter 3 and Appendix B), as all of these registries include programs that meet at least the emerging level as defined by the CDC. To continue to expand upon the movement toward evidence-based public health, the CDC framework should be used intentionally to inform local health department discussion and decision-making.

Local health departments should strive to implement strategies that are evidence-based and well supported.

Going forward, LHDs should strive to implement strategies that are evidence-based and well supported (i.e. at the best or leading level). Yet it is important to acknowledge that level of evidence is not the sole selection criterion for LHDs. In addition to considering variables included in the EBS rating such as effectiveness, reach, feasibility, sustainability, and transferability, local health directors must also weigh factors such as cost, local needs, staff competencies, transportation, and others. Regardless of the strategy chosen, LHDs should strive to assess the effectiveness of any strategy implemented. Evaluation is needed so that LHDs can justify continuing to fund a strategy that is effective or redirecting resources when a strategy is shown to be ineffective. This is particularly important when emerging or promising strategies are chosen since their effectiveness has not been well established. (See Chapters 3 and 5 for more discussion.) Public health decision making is complex and requires the consideration of many, often competing, factors. Ultimately, shifting to an evidence-based framework will help LHDs stay focused on using resources effectively to improve the impact of their public health work.

North Carolina's Division of Public Health has focused increasingly on the use of EBSs to improve the health of our state. LHDs engage in a variety of programs, policies, and clinical interventions to promote and support the health of their communities. Thus, there are multiple settings for LHDs to implement EBSs. The overall goal for implementing EBSs is to improve the quality of work being done by DPH and LHDs, increase the impact of this work, and, ultimately, improve the health of North Carolinians. EBSs offer an opportunity for public health practitioners to make a substantial impact on the health of their community by implementing those interventions that have been documented to have a positive impact.

The overall goal for implementing EBSs is to improve the quality of work being done by Division of Public Health and local health departments, increase the impact of this work, and, ultimately, improve the health of North Carolinians.

References

1. Brownson R, Gurney J, Land G. Evidence-based decision making in public health. *J Public Health Management Practice.* 1999;5(5):86-97.

2. Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: A fundamental concept for public health practice. *Annu. Rev. Public Health.* 2009;30:175-201.

3. US Preventive Services Task Force. USPSTF A-Z Topic Guide. http://www.uspreventiveservicestaskforce.org/uspstopics.htm. Published 8/1/12. Accessed August 29, 2012.

4. Community Preventive Services Task Force. The Guide to Community Preventive Services: The Guide To Community Services What Works to Promote Health. http://www.thecommunityguide.org/index.html. Published May 10, 2012. Accessed August 29, 2012.

5. Community Preventive Services Task Force. Systematic Review Methods. http://www.thecommunityguide.org/about/methods.html. Published March 29, 2012. Accessed August 29, 2012.

6. US Preventive Services Task Force. Methods and Processes: Recommendation Process. http://www.uspreventiveservicestaskforce.org/process.htm. Published December 1, 2010. Accessed August 29, 2010.

7. US Preventive Services Task Force. Grade Definitions. http://www.uspreventiveservicestaskforce.org/uspstf/grades.htm. Published May 2008. Accessed September 7, 2012.

8. Community Preventive Services Task Force. Understanding the Task Force Findings and Recommendations. http://www.thecommunityguide.org/about/categories.html. Published March 29, 2012. Accessed September 7, 2012.