Recommendations for Selecting, Implementing, and Evaluating Evidence-Based Strategies in Public Health

Chapter 5

The NCIOM Task Force on Implementing Evidence-Based Strategies strongly recommends that the Division of Public Health (DPH) and local health departments (LHDs) implement evidence-based strategies (EBSs) including clinical interventions, programs, and policies, and focus this effort on implementing EBSs to meet the Healthy North Carolina (HNC 2020) objectives. This is the surest way of improving the overall population health of the state. This chapter includes recommendations regarding how to build the infrastructure needed to support successful selection, implementation, and evaluation of EBSs by the Division of Public Health and local health departments, with the goal of improving North Carolinians' health outcomes.

Implementing evidence-based strategies is the surest way of improving the overall population health of the state.

The results from the survey of local health directors helped guide the Task Force as they developed recommendations to support and expand implementation of EBSs in public health at the state and local levels. The survey highlighted the need for a strong partnership between DPH and LHDs as they work together to increase the use of EBSs to improve public health outcomes. Early on, the Task Force realized that for these efforts to be successful, the relationship between DPH and LHDs must be one of reciprocal accountability. Reciprocal accountability emphasizes the reciprocal obligations of the state and the LHDs: for every increment of performance demanded from local health departments, the state has an equal responsibility to provide local health departments with the capacity to meet that expectation.[1]

The Task Force recognized three critical steps that must be taken to effectively implement EBSs: selection of appropriate EBSs to meet community health needs, implementation of those strategies with fidelity, and evaluation of the selected EBS. While this process sounds simple, it is anything but. As explained more fully in Chapter 3, selecting, implementing, and evaluating EBSs requires new skills and significant implementation resources (including training, coaching, and technical assistance).

The Task Force recognized that, for the immediate future, state and local health departments are unlikely to have significant new resources available to implement EBSs (aside from new federal or private grant opportunities). Thus, it is important to consider different strategies to implement EBSs that include enhancing existing efforts, shifting existing resources to EBSs, and pursuing new funding to implement EBSs. These strategies are discussed below:

- *Enhance existing efforts*. LHDs provide a variety of clinical services and prevention programs. Some of these existing efforts could be improved through additional training, coaching, and supervision to reach evidence-based standards for the delivery of clinical or prevention programs. DPH and LHDs have already successfully used this strategy to implement Bright

Futures in children's health programs and to implement motivational interviewing in the clinic setting.[2] (The Bright Futures initiative is described more fully below).

- *Shift existing resources*. LHDs implement many different programs aimed at improving the health of the people in their community. Some of these initiatives are evidence-based while others are good ideas that may not have been subject to sufficient testing to determine effectiveness. Health departments can be encouraged to shift existing resources from some of the programs that have not been thoroughly evaluated for effectiveness, to other similar programs that are evidence-based. For example, Buncombe County Health Department moved some of the existing maternal and child health staff that were providing community health nursing services into implementation of a Nurse Family Partnership program.

- *Pursue new resources*. In addition to redirecting existing resources into EBSs, the state and LHDs can seek out new funding or other opportunities to implement new EBSs. For example, the US Department of Health and Human Services offered a grant opportunity to the states to implement evidence-based home visiting programs, through the Maternal, Infant, and Early Childhood Home Visiting program (MIECHV). The grant required that the state use this funding to support implementation of evidence-based home visiting programs. DPH distributed the federal funds on a competitive basis to seven communities in the state to support the implementation of two different evidence-based home visiting programs: Nurse Family Partnership and Healthy Families.[3] (These initiatives are described more fully below.)

Three critical steps must be taken to effectively implement evidence-based strategies: selection of appropriate evidence-based strategies to meet community health needs, implementation of those strategies with fidelity, and evaluation of the selected evidence-based strategy.

Regardless of whether the state or LHDs choose to redistribute existing resources or create new programs, they will need to collaborate to effectively select, implement, and evaluate EBSs. Successful implementation of EBSs in LHDs across the state will require DPH and LHDs to fulfill reciprocal obligations. DPH must provide support to LHDs in the selection, implementation, and evaluation/monitoring process to ensure the success of LHD efforts. And, if the state provides the necessary help, LHDs have an obligation to implement EBSs targeted to addressing their high priority health needs.

Successful State-Local Partnerships to Implement Evidence-Based Strategies

As part of their mission and responsibilities, public health agencies advocate for and implement programmatic, clinical, and policy interventions that have been shown to improve the health of the public. State staff, including those working in Raleigh and in regional offices, can play an important role in helping LHDs successfully implement EBSs. Several successful partnerships between DPH, state regional consultants, and LHDs in implementing evidence-based programs, clinical interventions, and policies are described below.

Programs

The Division of Public Health has worked with LHDs to implement a number of evidence-based programs. Two of the more recent efforts were the implementation of Maternal, Infant, and Early Childhood Home Visiting program (MIECHV) and the Community Transformation Grant program (CTG). For each of these programs, DPH submitted a proposal to the federal government on behalf of the broader state public health community for competitive grant funds. DPH was successful in obtaining grant funding, and then partnered with LHDs to implement the evidence-based strategies.

MIECHV: DPH was awarded $3.2 million per year for three years in MIECHV funds from the Administration for Children and Families (ACF) within the US Department of Health and Human Services. ACF identified a total of 22 evidence-based home visiting programs that states could implement with the MIECHV funds.[a] Before submitting its application, DPH conducted a needs assessment and reviewed the ACF-approved EBSs to determine which strategies were most likely to work best in North Carolina. DPH identified five different EBSs that the state would support. The federal funding was only sufficient to support nine communities over the three year grant period (2011-2013). Therefore, DPH developed an application process to identify communities that had high needs and had the capacity to implement EBSs in their community. DPH received 24 applications for MIECHV funding. DPH then identified early adopters in different types of communities (e.g. Tier 1, urban/rural), with committed leadership and a high likelihood of success (to achieve early wins).

For every increment of performance demanded from local health departments, the state has an equal responsibility to provide local health departments with the capacity to meet that expectation.

Based on this strategy and available funding, DPH identified seven LHDs or other nonprofits to receive funding (although there are seven lead agencies, the grants provide services for residents of 12 counties).[3] The partner agencies included a mix of rural and urban, single county and district health departments and other nonprofit organizations. In five of the seven communities selected, an LHD or a partnership of multiple LHDs is the grant recipient. In the other two communities, nonprofits are the recipients. Grant recipients were given the opportunity to select one of the five EBSs identified by the state. Ultimately, the participating LHDs selected only two models—Nurse Family Partnership (NFP)[b] and Healthy Families (HF).[c] These two EBSs are distinct in terms of program design and implementation requirements. NFP had already been implemented in 10 counties across the state, and HF in five counties. MIECHV funds were used by LHDs to both implement new and expand existing NFP

a US Department of Health and Human Services. Home visiting evidence of effectiveness. http://homvee.acf.hhs.gov/Default.aspx. Updated July 26, 2011. Accessed July 18, 2012.

b Nurse-Family Partnership is an evidence-based nurse home visiting program that targets first-time low-income mothers and provides RN home visits to mothers during pregnancy and for two years after the child is born. More information is available online at http://www.nursefamilypartnership.org/.

c Healthy Families America is an evidence-based home visiting program designed to ease stress and reduce risk of child maltreatment for families who are overburdened or at risk for issues such as substance abuse or domestic violence. More information is available online at http://www.healthyfamiliesamerica.org/home/index.shtml.

and HF programs. The state assisted local partners in implementing NFP and HF by hiring an NFP state nurse consultant to provide support for home-visiting nurses and nurse supervisors; collecting and analyzing data to inform performance improvement; assisting with staff selection; and providing fiscal oversight, budget management, and contracts administration.[3] In addition, as part of this grant, DPH contracted with the National Implementation Research Network to support implementation of NFP and HF at the local level.[3]

Community Transformation Grants: The Affordable Care Act included funding for Community Transformation Grants (CTGs). The CTG program is being administered by the Centers for Disease Control and Prevention (CDC). CTGs support community-level efforts to increase tobacco free living, healthy eating, and active living, as well as increased links between the community and clinical systems around hypertension and cholesterol control.[4] All of these efforts are to be implemented through a lens of creating health equity. Funding was available on a competitive basis for states and for larger urban areas (with 500,000 people or more). In 2011, North Carolina was awarded a "rest of state" (excluding Mecklenburg and Wake) five-year grant, with an annual award of $7.4 million, the fourth largest award in the country.[5] This funding allows North Carolina the opportunity to advance implementation of evidence based interventions such as assisting multiunit housing managers that are recipients of HUD funding to effectively adopt recommendations to become smoke free; and implementation of Quality Improvement Systems that enhance the care of hypertensive patients in the North Carolina Area Health Education Centers (AHEC) and Community Care of North Carolina networks.[d] One goal of the CTG program is for states to build the evidence-base around the specific health impact of particular promising practices, such as expanding access to healthy foods in areas with the greatest health needs and health disparities through opening farmers markets. Therefore CTG funds will also be used to support and evaluate promising practices.

Clinical Interventions

The mission of the Children and Youth Branch of the Division of Public Health is to build, maintain, and assure access to systems of care that will optimize the health, social and emotional development for all children and youth. To further this mission, DPH decided to adopt the Bright Futures guidelines for preventive and screening services. Bright Futures, developed jointly by the American Academy of Pediatrics (AAP) and the Maternal and Child Health Bureau of HRSA, is a set of child health preventive screening and treatment guidelines that are theory-based, evidence-driven, and systems-oriented that can be used to improve the health and well-being of all children. As part of this work, DPH partnered with the Division of Medical Assistance (DMA) to align North Carolina's Medicaid and Health Choice well child visit requirements

d Petersen, R. Section Chief, Chronic Disease and Injury Section, Division of Public Health, North Carolina Department of Health and Human Services. Written (email) communication September 13, 2012.

for infants, children, and adolescents with Bright Futures recommendations.[e,f] DPH also required all LHDs offering clinical services for children to implement the Bright Futures guidelines in child health clinics and as part of the health department's electronic medical record system. To help LHDs meet this new requirement, DPH utilized a quality improvement approach that focused on outcomes; involved stakeholders from the beginning; allowed for local flexibility; used data to inform improvement decisions and document change; and tested and spread best practices.[6] DPH decided to pilot implementation in 8 health departments before implementing Bright Futures across the state. Implementation became a partnership between the state staff (including state regional nursing consultants), and the early adopting LHDs.

The Division of Public Health, in collaboration with the North Carolina Center for Public Health Quality, created a collaborative learning environment among these early adopters to provide a forum where the early adopters could learn from one another. In addition, a DPH child health nurse consultant helped them with implementation. The partners used data and created a feedback loop to help identify problems as well as solutions to assist in implementing Bright Futures with fidelity. The participating LHD staff identified small changes that were needed in some of the required documentation, as well as materials that needed to be translated into other languages. These changes were non-substantive and were readily approved by DPH and AAP. Once the participating health departments successfully implemented Bright Futures in their child health clinics, these county staff served as messengers and coaches for other LHDs as they began implementing Bright Futures.[6]

Collaborative leadership, built on a foundation of reciprocal accountability that recognizes and builds on the responsibilities, assets, and strengths of the state and local levels is important to create lasting and positive change.

According to those involved, one component that was critical to the success of this initiative was the role of DPH's regional nursing consultants.[6] In the past, the regional consultants were more involved in quality control/quality assurance efforts (e.g. monitoring services and programs to ensure that they met federal or state requirements). In contrast, during this project, the regional nursing consultants were more involved as quality improvement coaches as part of the Bright Futures roll-out. Rather than just providing compliance oversight as in the past, the regional nurse consultants worked collaboratively with LHDs in a partnering relationship to find out what was working, what the barriers were, and to devise solutions to overcome barriers. LHDs described the consultants as "passionate, knowledgeable, responsive, and customer-focused.[7]" Using this process, DPH and regional consultants were able to support the successful statewide rollout of Bright Futures in all health departments in approximately 15 months, which was widely regarded as impossible using the traditional approach.

e The Affordable Care Act requires that all insurers pay for evidence-based child health preventive screenings and treatment identified by Bright Futures. (Sec. 1001 of the Affordable Care Act, amending Sec. 2713(a)(3) of the Public Health Service Act, 42 USC 300gg-13)

f Tant, C. Head, Children and Youth Branch, Women's and Children's Health Section, Division of Public Health, North Carolina Department of Health and Human Services. Written communication (email) September 13, 2012.

Policy

The Task Force also heard from DPH staff about successful efforts to implement changes in tobacco laws. Implementing evidence-based policies is different than implementing evidence-based programmatic or clinical strategies, as policy change may focus more heavily on educating policy makers at the state or local governmental level.[g] However, there are some elements required to successfully implement evidence-based policies that are parallel to the process used to successfully implement evidence-based program or clinical strategies. First, DPH or LHDs must identify the priority health need to be addressed and examine the research literature to determine if there is an evidence-based policy solution that is appropriate for the community (selection). Second, DPH and/or LHDs must identify other community partners that can help with advocacy and implementation (implementation). Effective implementation of public policies requires more than getting a law or ordinance passed. Thus, LHDs, with the support of the state, must also track compliance with the law to ensure that the law is enforced (evaluation).

The Tobacco Prevention and Control Branch (TPCB), within the Division of Public Health Chronic Disease and Injury Section, worked with LHDs to implement the 2009 law regulating tobacco smoke in public places (including restaurants and bars).[h] DPH staff created an implementation team, including state and regional staff from DPH, the University of North Carolina at Chapel Hill School of Government, and LHDs. The state staff also helped create an implementation timeline, webinar trainings, and monitoring tools. They also created a website with all the information necessary to support implementation.[i] As part of this process, they educated the public and the business owners, and publicly celebrated successes. Compliance with North Carolina's smoke-free restaurant and bars law has been very strong. There have, however, been several legal challenges to the law, and the TPCB has continued to work with local health directors, boards of health, and county attorneys where available to meet these challenges.

This new law also gave local governments the authority for additional regulations for smoke free government buildings, grounds and public places (defined as "An enclosed area to which the public is invited or in which the public is permitted.[j]") The TPCB is working with LHDs to build support for evidence based smoke-free policies in these settings, as well as on college and community college campuses as a part of the Community Transformation Grant(CTG). In addition, the US Department of Housing and Urban Development (HUD) has recommended that housing supplemented with HUD funds be smoke-free,

g To fulfill their mission, public health agencies have responsibilities to promote the use of scientific knowledge in public policies to assure the conditions in which people can be healthy. Institute of Medicine, *The Future of Public Health*. Washington, DC: National Academy Press; 1988.

h NCGS 130A-496

i SmokeFree.NC.gov. North Carolina Division of Public Health website. http://tobaccopreventionandcontrol.ncdhhs.gov/smokefreenc/. Accessed September 9, 2012.

j NCGS 130A-496.

so TPCB and CTG are working collaboratively with owners and managers of affordable housing, market rate housing, and local housing boards for public housing in order to protect people in multi-unit housing from involuntary exposure to tobacco smoke that drifts through buildings.

In addition to these examples of DPH-led efforts, there are many other examples of EBS being implemented at the local level by LHDs. In these cases, LHDs took the lead in identifying appropriate EBSs to address priority health needs. In many of these instances, the health departments worked with national program offices to obtain the necessary technical assistance and support to implement these programs with fidelity. When technical assistance was not available from national program purveyors, LHDs attempted to implement the programs using internal resources.

Lessons Learned from Past Efforts to Implement Evidence-Based Strategies

A review of the implementation literature, as well a review of as past efforts to implement evidence-based programs, clinical interventions, and policies, highlight several lessons in successfully implementing evidence-based strategies. These lessons are highlighted below.

1. Leadership is critically important at the state and local levels. Collaborative leadership, built on a foundation of reciprocal accountability that recognizes and builds on the responsibilities, assets, and strengths of the state and local levels is important to create lasting and positive change.

2. LHDs need help identifying and selecting appropriate EBSs to address their priority health needs.

3. DPH and LHDs should identify champions to support implementation of evidence-based strategies. EBS champions should be trained in implementation science and quality improvement to understand the necessary steps to ensure implementation of EBSs with fidelity.

4. When implementing statewide or multicounty initiatives, DPH should initially select LHD partners with strong leadership, passion, commitment to success, and the capacity to successfully implement the initiative. DPH should also select a mixture of different types of LHDs (e.g., rural/urban, single county/regional districts, Tier 1 counties) to ensure the initiative can be successfully implemented in different types of communities across the state.

5. DPH should involve state and regional staff and LHD staff in a collaborative arrangement while implementing any statewide or multi-county initiative. LHDs need to be at the table early in the design of the implementation strategy. Not only can LHDs provide important input to ensure implementation success, but, once they have successfully

implemented a strategy, they can become important messengers to other LHDs who are interested in implementing similar EBSs.

6. LHDs will need assistance in staff training, coaching and technical assistance.

7. State, regional, and local staff need to be trained in strategic planning for policy work and quality improvement methods for program, policy, and clinical implementation. They need to understand how to monitor policy and program implementation progress and adjust implementation as needed (within EBS parameters).

8. EBSs must be monitored and outcomes assessed in order to determine if the intervention is being implemented appropriately and achieving its desired goals.

There is a need for broader education to ensure that everyone in the public health community understands the importance of focusing limited public health resources on implementing strategies that have been shown to be effective in producing positive health outcomes.

The Task Force recognized that neither the state nor LHDs had the resources to identify, implement, and support EBSs in all program areas immediately. Thus, the Task Force acknowledged that it was important for the state and local communities to set realistic expectations about what could and should be accomplished in the immediate future to identify, implement, and evaluate EBSs in North Carolina.

In addition, knowledge of what works is constantly evolving. Information is currently lacking about effective interventions for some of the major health problems facing the state. Additionally, some EBSs that have been shown to be effective in certain communities or with select populations may not work equally well in other communities or with other populations. Moreover, the state and local communities should also have some flexibility to develop and test new interventions in order to build knowledge of other effective EBSs. However, the Task Force recommends that there be greater emphasis on program and outcome evaluation when LHDs implement a strategy that is not considered best or leading for one of its two EBSs identified to address community health priorities (described more fully below).

This following section lays out the reciprocal obligations of LHDs and DPH in educating LHD leadership, staff, and partners; selecting appropriate EBSs; implementing EBSs with fidelity; and continuous monitoring and evaluation of the initiatives.

Educating Local Health Department Leadership, Staff, and Partners

In the survey sent to LHD directors (see Chapter 4 and Appendix C), 68% of the health directors reported that fewer than half of the staff in the health departments were aware of evidence-based strategies in public health. In addition, 39% reported needing help with staff training to improve knowledge and skills of evidence-based strategies as one of their top three types of assistance needed from the state. These responses highlight the need for broader education to ensure that everyone in the public health community understands the importance of

focusing limited public health resources on implementing strategies that have been shown to be effective in producing positive health outcomes. While the Task Force recognized the need to provide basic education to the broader public health community, including policy makers and community partners, the Task Force focused its attention on how to ensure that health department staff received the necessary training. DPH and LHD staff, including public health leadership and senior management and staff involved in selecting evidence-based strategies need a basic understanding of what EBSs are, why it is important to implement EBSs, and the need to implement these strategies with fidelity to their tested design. Educating key public health staff at different levels is critical in order to create a paradigm shift to focus more of public health's limited resources on implementing evidence-based programs, policies, and clinical interventions.

Because the need for education and training around EBSs is widespread, the Task Force looked for opportunities to educate and train staff from multiple LHDs together. Information about the importance of implementing EBSs should be built into existing statewide conferences and training events in multiple venues (e.g. annual state health directors' meeting, monthly health directors meetings), regional meetings, and meetings targeting specific types of health department staff (e.g. nurses, health educators). The state should also use regional and statewide meetings to highlight local success stories (e.g. EBSs implemented by LHDs in North Carolina that have led to positive health outcomes). The goal of these trainings is to educate LHD staff about the reason to implement EBSs, excite them about the possibilities for positive health outcomes, and encourage their interest in implementing similar strategies in their communities. More detailed trainings and coaching are needed for people who are charged with implementing specific EBSs (these trainings are discussed more fully below).

In addition, partner organizations including, but not limited to, the Center for Healthy North Carolina, the North Carolina Institute for Public Health, and the North Carolina Center for Public Health Quality, and other academic partners should use their dissemination mechanisms to inform other public health and community partners about the need to implement EBSs, as well as successful implementation efforts in North Carolina.

To effectuate this broader paradigm shift to support implementation of EBSs, the Task Force recommends:

Recommendation 5.1: Educate State and Local Public Health Staff about Evidence-Based Strategies

a) State public health staff, in partnership with other state agencies, the National Implementation Research Network (NIRN), the North Carolina Institute for Public Health (NCIPH), the Center for Training and Research Translation(Center TRT) at the University of North Carolina at Chapel

Hill, the North Carolina Center for Public Health Quality (NC CPHQ), and other appropriate partners should identify or, if necessary, develop generic trainings about evidence-based strategies (EBSs), and offer these trainings in multiple settings, including but not limited to existing state and regional public health meetings, Area Health Education Centers (AHECs), and online. These generic trainings should focus on the reasons for and importance of implementing evidence-based strategies. These trainings should include information on national compendiums of evidence-based strategies; how specific programs, policies, and clinical interventions are evaluated by different organizations to determine whether they are evidence-based; the importance of selecting appropriate strategies to meet the communities' needs; implementing EBSs with fidelity; and the need to include monitoring and feedback loops to ensure that the EBS is achieving its desired goals. The trainings should also highlight examples of successful EBSs that have been implemented in North Carolina.

b) The Division of Public Health should ensure that appropriate state (including regional) staff receive EBS training. Specifically, all Division directors, management, and key program staff should attend or participate in the generic EBS training to understand the importance of implementing EBSs and gain a basic understanding of what is needed to ensure that EBSs are implemented with fidelity.

c) Local health department directors should ensure that appropriate staff receive EBS training. Specifically, all members of the local health department leadership and senior management, those involved in selecting EBSs, and other relevant staff should attend or participate in the generic EBS training to understand the importance of implementing EBSs and gain a basic understanding of what is needed to ensure that EBSs are implemented with fidelity.

d) Partner organizations, including but not limited to the Center for Healthy North Carolina, NCIPH, Center TRT, NIRN, NC CPHQ , the Department of Public Health at East Carolina University, the North Carolina Center for Health and Wellness at the University of North Carolina at Asheville, and the Family and Consumer Sciences Department at North Carolina State University, should disseminate information about the reason to implement evidence-based strategies, as well as examples of successful implementation and impact on health outcomes.

Selecting Appropriate Evidence-Based Strategies

Before selecting an EBS, the LHD must first identify the need it is trying to address. As discussed previously, DPH is using the community health assessment (CHA) and action plan process to increase LHDs' focus on HNC 2020 objectives and EBSs.[k] As part of CHAs, LHDs are required to examine the health needs of their community and involve the community in setting health priorities. LHDs are required to develop action plans for each community health priority identified in the CHA. CHAs are submitted in December (with a shorter report, the State of the County's Health, required in non-CHA years). Action plans must be

submitted to DPH by the following June. In order to ensure that all health departments focus on some of the statewide health priorities, each LHD must include in their county action plan at least two Healthy North Carolina 2020 objectives from the 40 objectives. These objectives must come from at least 2 of the 13 focus areas. The current action plan requires LHDs to "list the 3-5 evidence-based interventions (proven to effectively address this priority issue) that seem the most suitable for your community and/or target group.[8]" However, there is no requirement for LHDs to implement any of the EBSs that they identify in their action plans.

Local health departments have historically conducted their CHA on a staggered basis. As of December 2012, 32 LHDs will have submitted their community action plans to DPH with their priority HNC 2020 objectives. This is the first round of CHAs that will include the priority HNC 2020 objectives.

As noted in Chapter 3, the process of selecting an appropriate EBS to address a specific community health need is more involved than merely identifying a strategy that was successful in another community. Communities need to determine whether particular strategies are a good fit for their community. As part of this analysis, they need more information about the different EBSs including the level of evidence supporting the various EBSs, staffing needs, the costs of implementation, and whether or not the program offers technical assistance and/or coaching to implement the program with fidelity. They also need to consider whether they have, or could obtain, the appropriate staff and/or resources to be able to implement the EBS with fidelity. For some EBSs this information is readily available—for others the information is more difficult to obtain.

As discussed in Chapter 4, approximately one in four LHD directors reported that one of their health department's top three needs for state support was selecting appropriate EBSs for their community. Many health directors were unaware of, or did not routinely use, nationally recognized repositories of evidence-based

k Nonprofit hospitals are also required to conduct a community health assessment to maintain their charitable tax status. However, under federal law, nonprofit hospitals are required to conduct this assessment at least once every three years. Thus, some of the LHDs have gone to a three year community health assessment cycle to work collaboratively on the community health assessment with their local hospital.

strategies, such as the Centers for Disease Control and Prevention's Guide to Community Preventive Services (for EBSs on a wide range of topics) or the National Registry of Evidence-Based Programs and Practices (for EBSs on mental health and substance abuse. (See Chapter 4 and Appendix C.) Health directors were also interested in information about where strategies had been successfully implemented, particularly those implemented in North Carolina.

Local health directors and their staff need more education about what EBSs are, how to identify EBSs, and the factors that should be weighed when considering EBSs for implementation in their community. As discussed in Recommendation 5.1, DPH should educate LHD staff about EBSs. Information about national compendiums of public health EBSs should be included in the EBS education and training. Additionally, information about EBSs being implemented or supported by the state, state contacts for selected EBSs, and links to national compendiums of EBSs should be maintained on a central website.

Table 5.1
Preliminary Priority Healthy North Carolina 2020 Objectives[a]

Reduce the percentage of non-elderly uninsured individuals (aged less than 65 years)
Increase the percentage of adults who are neither overweight nor obese
Increase the percentage of high school students who are neither overweight nor obese
Increase the percentage of adults getting the recommended amount of physical activity
Increase the percentage of adults who consume five or more servings of fruits and vegetables per day
Reduce the cardiovascular disease mortality rate (per 100,000 population)
Decrease the percentage of adults with diabetes
Reduce the colorectal cancer mortality rate (per 100,000 population)
Reduce the percentage of high school students who had alcohol on one or more of the past 30 days
Reduce the percentage of individuals aged 12 years and older reporting any illicit drug use in the past 30 days
Decrease the percentage of adults who are current smokers
Decrease the percentage of high school students reporting current use of any tobacco product

[a]as identified by 32 local health departments in their 2011 community health assessments
Source: Nelson D. Assistant Branch Manager, Heart Disease and Stroke Prevention Branch, Division of Public Health, North Carolina Department of Health and Human Services. Written (email) communication September 14, 2012.

Given the broad need for help identified by LHD directors and the DPH requirement that LHDs identify EBSs, the Task Force explored different ways in which DPH and other state partners could support LHDs in selecting appropriate evidence-based strategies. The group recognized that DPH did not have the resources to provide background information or implementation support for every program, policy, or clinical intervention that has some level of evidence to support its effectiveness. Rather, the Task Force recommends that DPH staff work with local health directors to identify at least two EBSs (when available) for 10 of the HNC 2020 objectives identified as priority objectives in the community health assessments submitted to DPH. The selection of HNC 2020 priority objectives should be informed by the community health action plans already submitted to DPH. (See Table 5.1.) While the Task Force supported the CDC definition of four levels of EBSs, the Task Force recommends that DPH focus on EBSs that fall into the leading or best categories, when available. This will help ensure that state resources are only supporting strategies with very high levels of effectiveness. The selected strategies should include a mix of clinical, programmatic, and policy strategies (when

available and appropriate). DPH should identify these EBSs for the first group of priority objectives no later than July 1, 2013.

For each of the selected EBSs, DPH should put together information about the strength of the supporting evidence, the potential for population impact, the resources and staffing needed for implementation, potential costs, and available training or technical assistance at the regional, state, or national level to support implementation. For every EBS, DPH should identify an expert who can answer questions about the EBS, such as the strength of the evidence for the EBS and basic requirements for successful implementation. The expert should also know what level of implementation support is provided by the program or other appropriate organizations. DPH should also develop a list of questions for LHDs to consider in selecting appropriate EBS.

To maximize the likelihood of success in implementing EBSs, DPH should provide or help identify sources of implementation support for any selected EBSs. (See Recommendation 5.3.) DPH should also help LHDs in identifying or preparing a quality improvement and basic evaluation plan to ensure that the state-selected EBSs are being implemented with fidelity and capture appropriate process and outcome data. (See Recommendation 5.4.) The expert for each EBS should also know of any potential funding sources and information about other communities in North Carolina that have implemented the same EBS.

The Task Force also recognized that some of the DPH branches may have flexibility to redirect some of their existing staff to assist LHDs in the selection, implementation, or evaluation of EBSs. Other branches may have less flexibility because of restrictions in state or federal funding used to support those positions.

In those instances, DPH should try to identify state or national partner organizations that may be able to assist in this effort. Some of the partnering organizations could include national program offices (for a specific EBS), Center TRT, NCIPH, NIRN, NC CPHQ, the Department of Public Health at East Carolina University, the North Carolina Center for Health and Wellness, and the Family and Consumer Sciences Department at North Carolina State University.

While greater state support should be available if the LHDs implement one of the state-selected EBSs, LHDs are still free to select from other EBSs. However, if the LHD chooses to implement an EBS that does not have the level of evidence to support a Best (B) or proven or Leading (L) ranking, then it should also include a stronger evaluation to ensure that the health department collects the data needed to determine whether the intervention is making a positive impact on the community health need.

The Task Force members also recognized that there are times when DPH may require statewide implementation of an EBS. This may occur when the state changes a public health law and county health departments are required to

monitor its implementation (for example, implementation and monitoring of the smoke free restaurant and bars legislation). Or it may occur when there are new federal requirements that must be implemented. It may also occur when implementing clinical guidelines that should be part of the regular standard of care provided by all health departments. In these instances, DPH can identify the appropriate EBS and require implementation across the state.

Recommendation 5.2: Select Appropriate Evidence-Based Strategies

a) To support the selection of appropriate evidence-based strategies (EBSs) at the local level, the Division of Public Health (DPH) should, to the extent possible:

1) Work with local health directors, academic institutions, and partnering organizations to identify two EBSs for ten HNC 2020 objectives identified as priorities in the action plans submitted to DPH by local health departments (LHDs). DPH should identify these state-selected EBSs no later than July 1, 2013. To the extent possible, DPH should focus on EBSs that would meet the standards for best or leading practices. DPH and collaborating partners should also try to identify a mix of evidence-based policies, programs, and clinical interventions, and should focus on those EBSs that, based on prior evaluation evidence, would have the best chance of having a positive health impact in communities throughout North Carolina.

2) Identify at least one expert within DPH, or another appropriate state agency, academic institution, or partnering organization for each of the selected EBSs. Each EBS expert should be able to provide information about the populations targeted, strength of the evidence and, to the extent possible, the expected impact; costs, staffing requirements, and other necessary implementation resources; implementation barriers; the availability of implementation and evaluation resources including training, technical assistance, coaching, and evaluation tools; any potential funding sources (if known); and information about any other communities in North Carolina that have implemented the same EBS.

b) The Center for Healthy North Carolina should maintain a website with information about EBSs. The information maintained in the Center for Healthy North Carolina's website should be linked to other state websites, including HealthStats for North Carolina and the North Carolina Center for Public Health Quality. Specifically, the website should include:

1) Detailed information about each of the EBSs identified by DPH, along with a DPH or other expert for each of the selected EBSs.

2) **Information about other EBSs being supported by DPH.**

3) **Information about communities in North Carolina that are implementing each of the selected strategies.**

4) **Links to national compendiums of EBSs to assist communities in selecting other appropriate strategies.**

5) **A search or sorting mechanism so that LHDs can easily identify sources of EBSs with potentially appropriate program, clinical, and policy strategies by HNC 2020 objectives.**

6) **Links to organizations that provide information and/or assistance with implementing EBSs including, but not limited to, the National Implementation Research Network.**

7) **Archived webinars on the importance of implementing EBSs (basic training), as well as more detailed training, if available, about those EBSs being supported by DPH.**

c) **DPH should select EBSs and assist in statewide roll-out when implementation of a specific EBS is required as part of state or federal law, or supported by changes in clinical standards of care.**

Implementing Evidence-Based Strategies with Fidelity

Selecting an appropriate EBS is an important first step towards effective implementation. Once selected, the LHD must ensure that the program, policy, or clinical intervention is implemented with fidelity. This is the primary way in which the health department can ensure that the intervention has the desired health impact. However, 23% of local health directors reported that they needed help with implementation as one of their top three priorities for state assistance. In addition, 20% noted the need to create a peer support network, and 15% reported that they needed help recruiting and retaining qualified staff.

The primary reason to implement an EBS is because these strategies have been tested in multiple settings and have been shown to achieve a positive health outcome. These initiatives have achieved these health outcomes by following certain key programmatic, clinical, or policy guidelines. A community cannot expect to achieve the same positive health outcomes unless it follows the core components of an evidence-based program, policy, or clinical intervention. While there are certain components that must be followed exactly to ensure fidelity, there may be other components that LHDs may vary to meet specific local needs. It is important to work closely with the national program office or other experts to determine which components are critical to successful

implementation, and which components can be adapted to meet the needs of different communities or cultural groups.

Local health departments must follow certain key steps to ensure successful implementation of EBSs. (See Chapter 3.) For example, there must be leadership support for the initiative. Program staff must also be adequately trained, and there should be ongoing coaching and/or technical assistance to help staff implement the EBS. Local health departments should build the capacity internally to have staff who can serve as coaches to train and support other program staff and other community partners, when allowable within the context of the specific EBS. In addition, staff need to be trained on quality improvement methods, so they can monitor progress and modify implementation as needed (and as allowed) to achieve program goals. Successes should be celebrated and shared with other health departments to help disseminate successful interventions across the state.

As noted earlier, new funding may be needed to support implementation of some EBSs, particularly new programmatic initiatives. It is not surprising, therefore, that local health directors also noted the need for new funding as a top need from the state. For example, 31 respondents (47%) noted that they needed state help with grant writing to fund EBSs, and 26% noted that they needed access to information about funding sources. The Task Force recommends that the state seek funding from national funding sources when grants were available to support statewide and/or multi-county initiatives. However the Task Force recognized that grant funding is not always available to support statewide or

multi-county interventions. In those instances, DPH can assist LHDs by keeping them apprised of funding opportunities and by providing LHDs with information about grant writing workshops.

Although the Task Force recommends that DPH identify EBSs to support 10 of the 40 HNC 2020 objectives identified as priorities by LHD's community health assessments, it was aware that different DPH divisions are helping support implementation of EBSs that address other priority health objectives (e.g. those that were not specifically listed as one of the 40 HNC 2020 objectives). To the extent possible, DPH should provide the same level of support to LHDs implementing these EBSs as is recommended for state-selected EBSs targeting HNC 2020 objectives.

Thus, to support successful implementation of the state-selected EBSs, the Task Force recommends:

Recommendation 5.3: Implement Evidence-Based Strategies

a) The Division of Public Health (DPH) should build state and local staff capacity around implementation science, coaching, and quality improvement methods.

1) DPH should identify champions for EBSs in each Branch and within regional staff. These champions should be trained in implementation science and quality improvement to understand the necessary steps to ensure that evidence-based programs, policies, and clinical interventions are implemented with fidelity. These champions should be able to assist the state and local health departments to support a broad array of EBSs, rather than focus on implementation of a specific EBS.

2) Provide training to state, regional, and local public health staff—through the North Carolina Center for Public Health Quality and other partners—about quality improvement methods, including rapid cycle testing (PDSA cycles), monitoring, and feedback loops to ensure successful implementation.

3) Disseminate information on grant writing trainings.

b) For each of the state-selected evidence-based strategies (EBSs), the Division of Public Health (DPH) should:

1) Disseminate information on funding opportunities when available.

2) Promote collaborative learning approaches among local health departments (LHDs) and regional staff who are working on implementing similar EBSs.

3) Celebrate implementation successes and distribute information about successes to other health departments across the state.

c) When leading a statewide or multi-county implementation of an EBS, DPH should:

1) Pursue funding opportunities when needed to support statewide or multi-county implementation of EBSs. Select a mix of different LHDs to pilot a statewide roll-out of an EBS, or when funding is only available to support implementation in a small number of counties. The LHD partners should be selected with the goal of ensuring successful implementation. Selection criteria should

include, but not be limited to: need, leadership support, past history of successful implementation of EBSs, staffing and resource capacity, and commitment to success. To the extent possible, DPH should select a cross-section of LHDs that is broadly representative of the state including rural and urban health departments in different geographic areas of the state, those covering Tier 1 low-resource communities, and single county and district health departments.

2) **Partner with LHDs and other organizations early in the implementation process in order to include the important knowledge and perspectives these groups bring as well as to improve the likelihood of a successful spread of the EBS across the state.**

3) **Use a quality improvement rather than a quality control approach to collaborative partnerships with LHDs.**

4) **Provide training, technical assistance, and coaching, or ensure that these resources are available through national program staff, or other partnering organizations. This training, technical assistance, and coaching should be available to all LHDs that are seeking to implement the specific EBS (whether funded through the state or not), unless directly prohibited by national program rules, or the state lacks sufficient resources to assist all LHDs that request help. If resources are limited, DPH staff can phase-in the technical assistance on a rollout basis. Training should be experientially based to give participants the skills needed to implement the EBS in their own communities. To the extent possible, LHD staff should be involved in the trainings so that they can explain how they addressed implementation barriers to those interested in implementing a similar strategy.**

d) **To support successful implementation at the local level, LHD leadership should:**

1) **Serve as champions within their own LHDs to implement EBSs to address priority community health objectives.**

2) **Create teams of trained staff who can help support implementation of specific evidence-based strategies in the LHD. Ensure that every staff member who is involved in the implementation of an EBS receives appropriate training.**

3) **Engage community partners as necessary to the success of the EBS.**

4) **Serve as a resource to other local health departments who are interested in implementing a similar EBS in their community.**

Evaluation

Evaluation is also an important component of effective implementation of EBSs in LHDs. This does not mean that LHDs need to conduct randomized controlled studies to test the effectiveness of particular interventions—at least not for those that have been thoroughly evaluated elsewhere. But effective implementation does require the collection of some outcome measures to ensure that the intervention is achieving its desired purpose. LHDs may also need data about program effectiveness to support ongoing funding. For example, if an initiative was initially supported through outside grant funds, LHDs may need support from their local county commissioners or state government to continue the effort once the initial funding period is elapsed. County commissioners or other potential funding sources will want basic information about cost-effectiveness or return on investment to ensure that continued funding is a wise investment.

Collection of both process measures (as part of implementation of an EBS) and outcome measures is critical. Evidence-based programs, policies, and clinical interventions may fail to meet their desired goals because the selected initiative was not properly implemented. Or it may fail to meet goals because it did not match the community needs. Without knowing if the initiative was implemented with fidelity, it is difficult to interpret the success or failure of a given EBS on changing health outcome measures.

Twenty-two of the surveyed health directors (33%) noted that they needed state help in capturing the data needed to demonstrate the impact of EBSs in the community as one of the top three needs for state assistance, and another 15% noted the need for help with evaluation. The state can assist with this effort by providing training to LHD staff on what data to collect and how to collect and analyze data. The state may also help analyze data, particularly for statewide or multi-county initiatives. To help facilitate data collection, the Task Force recommends that DPH create basic common data collection tools utilizing Excel or other common software for each of the state-selected EBSs. These tools should be easy to understand and use and should capture the basic data that is needed to assess whether a program is having a positive impact on participants. Such tools could be used by LHDs seeking to implement one of the state-selected EBSs if the national program office does not already require the use of particular tools. Common data tools will help ensure that data is being captured consistently across the state. LHDs implementing state-selected EBSs who use the state-developed data tools should submit their data to the state expert for that EBS. The Task Force recommends that the state, through the EBS experts or staff at the State Center for Health Statistics staff, take the lead in analyzing the data to determine the outcomes for the state and local counties. LHDs will still have the independent responsibility of monitoring internal process measures to ensure that the program is being implemented with fidelity.

As noted earlier in this chapter, there are legitimate reasons why a LHD may choose not to implement a state-selected EBS, or may choose to implement an EBS that does not yet have the level of evidence to be considered best or leading. (See Chapter 2.) LHDs that choose to implement EBSs that are not state-selected, or that are not best or leading have different evaluation responsibilities. For example, if a LHD chooses to implement a best or leading EBS, but not one supported by the state, then the LHD will need to work with the national program office to ensure that the program is implemented with fidelity (e.g. through the use of a fidelity monitoring tool). Those LHDs that choose to implement EBSs that are promising or emerging should assume a greater responsibility to evaluate health outcomes, and to help expand the knowledge base about these interventions. This may require LHDs to contract with academic institutions or independent organizations for a more detailed evaluation.

To ensure that the evidence-based strategy is being implemented appropriately and achieving desired outcomes, the Task Force recommends:

Recommendation 5.4: Monitor and Evaluate Process and Outcomes

a) To evaluate the effectiveness of state-selected evidence-based strategies (EBSs) being implemented in North Carolina, the Division of Public Health (DPH) and local health departments (LHDs) should, in collaboration with academic institutions and other partner organizations:

1) Identify or develop an evaluation design and data collection tools for each state-selected EBS appropriate to the level of evidence-base that already exists.

2) Provide training and coaching to local staff to enable them to collect the appropriate data.

3) Gather data from LHDs and analyze process and outcome measures at the state level to determine impact of EBSs for the state and local counties.

4) Assist with dissemination of program results.

b) To ensure that state-selected EBSs are implemented with fidelity and that the program can be properly evaluated, LHDs should:

1) Ensure staff receive necessary training on collecting data on EBSs.

2) **Collect requisite process and outcome data and submit to the state for analysis.**

3) **Review local process and outcome measures and make necessary changes in the program implementation to ensure fidelity to key program components.**

c) **If a LHD chooses to implement an EBS that is not state-selected but that is considered best or leading the LHD should work with the national program office to identify the information needed to ensure that the program has been implemented with fidelity, and collect the appropriate data.**

d) **If a LHD chooses to implement an EBS that is promising or emerging, then the LHD should develop a more thorough evaluation plan that captures both process and outcomes measures.**

Reciprocal Obligations

The Task Force identified many ways in which DPH and collaborating partners could assist LHDs in implementing evidence-based programs, policies, and clinical interventions. As described above, this included generic training about evidence-based strategies; assistance identifying appropriate EBSs to help reach the Healthy North Carolina (HNC) 2020 objectives; training, technical assistance and coaching to ensure that EBSs are implemented with fidelity; and monitoring and evaluation support.

If the state provides this assistance, then LHDs have reciprocal obligations to implement evidence-based strategies. To support expansion of EBSs aimed at improving HNC 2020 objectives, LHDs should identify and implement (as the lead agency) an EBS not currently being implemented in their community for

each of the two HNC 2020 priority objectives identified as priorities in their community health assessment and action plans. Alternatively, the LHD could choose to expand an EBS currently in use to reach a new target population. These EBS can be selected from among the state-selected EBSs, or can be another EBS identified in one of the national compendiums. While greater state support should be available if the LHDs implement one of the state-selected EBSs, LHDs are still free to select from other EBSs. However, if the LHD chooses to implement an EBS that does not have the level of evidence to support a best or leading ranking, then it should also include a stronger evaluation to ensure that the health department collects the data needed to determine whether the intervention is making a positive impact on the community health need.

LHDs that select an EBS that the state has identified will receive support from DPH, or partnering organizations, in the implementation and evaluation phases. LHD leadership and staff must attend the necessary trainings, implement the EBSs with fidelity, and collect and report the required evaluation data to the state. These requirements should be built into the annual contract the LHD signs with the state. Therefore, the Task Force recommends:

Recommendation 5.5: Revise the Consolidated Agreement

a) If the Division of Public Health (DPH) provides the necessary support as reflected in Recommendations 5.1-5.4, DPH should revise the 2013 Consolidated Agreement to reflect a new requirement that local health departments (LHDs) implement two new evidence-based strategies (EBSs) (or expand an existing EBS to a new target population) to address at least two HNC 2020 priority objectives identified through the community health assessment and articulated in the LHD action plans. The priority objectives should be selected from at least two of the HNC 2020 focus areas.

b) DPH should change the community action plans to require LHDs to identify the EBSs that they have selected, along with a staffing, training, implementation, and monitoring/evaluation plan.

Partnering Organizations

The Task Force recognized that the Division of Public Health may not have sufficient resources or expertise to be able to support LHDs with selection, implementation and monitoring/evaluation for all the state-selected EBSs. Some divisions have more flexibility to be able to redirect existing staff and resources to support this effort; others may be more proscribed in what they can accomplish. Nonetheless, everyone recognized the importance of moving as forcefully as possible towards implementation of EBSs to improve population health.

One way to expand DPH's capacity to support LHDs is by working with state and national partners. There are a number of other academic and nonprofit organizations in North Carolina with this mission, as well as some funding that can be used to help support implementation of evidence-based strategies in local health departments. These organizations do not have unlimited resources or staff, so cannot (and should not) assume DPH's role in supporting LHDs in this effort. However, these community partners can expand the work of DPH to help support LHDs.

Representatives of the Center for Training and Research Translation (Center TRT) within the Center for Health Promotion and Disease Prevention at the

University of North Carolina at Chapel Hill[l] have agreed to help convene other academic institutions and nonprofit organizations with the expertise to help support the state and local effort to expand use of EBSs to address the HNC 2020 objectives. The Center TRT's mission is to enhance the public health impact of state and community obesity prevention efforts by providing the training and evidence that public health practitioners need to improve nutrition and physical activity, behaviors, environments, and policies. Such efforts could significantly help support the state and local effort to select, implement, and evaluate EBSs by local health departments. Therefore the Task Force recommends:

Recommendation 5.6: Collaborate with Partner Organizations

a) The Center for Training and Research Translation (Center TRT), within the University of North Carolina at Chapel Hill, should convene academic and other appropriate organizations to work with the Division of Public Health and local health departments in implementing evidence-based strategies to address the Healthy North Carolina (HNC 2020) objectives. Some of the other academic or community partners may include, but not be limited to: the North Carolina Institute of Public Health (NCIPH), the North Carolina Center for Public Health Quality, the National Implementation Research Network (NIRN), the Department of Public Health at East Carolina University, North Carolina Center for Health and Wellness, the Family and Consumer Sciences Department at North Carolina State University, and the Center for Healthy North Carolina.

b) To the extent possible within existing funding, these academic and nonprofit organizations should:

1) Assist the state in identifying appropriate EBSs to address priority HNC 2020 objectives.

2) Provide implementation support such as training, coaching, or other technical assistance.

3) Assist the state in developing appropriate data collection instruments needed for evaluation, or help communities develop implementation plans (if the EBS is not one of the state-selected EBSs).

4) Assist with the collection and analysis of evaluation data.

l The Center for Training and Research Translation (Center TRT) within the Center for Health Promotion and Disease Prevention at the University of North Carolina at Chapel Hill is a Prevention Research Center of the Centers for Disease Control and Prevention. As such, the CDC provides the majority of Center TRT's funding.

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