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online guide

Guide to evidence-based prevention

This guide provides policymakers, funders and prevention planners with a common understanding of "evidence-based practice" and tools to identify effective strategies to prevent high-priority health problems. Focusing on sources that are credible and user-friendly, this guide is designed to help planners navigate the many online sources of evidence that have emerged in recent years.

Evidence-based public health involves assessing the size and scope of health problems, as well as identifying approaches that are effective in addressing these problems. This guide focuses on the latter, with an emphasis on prevention strategies implemented in community settings, rather than clinical preventive services delivered in hospitals, doctor's offices, and other healthcare settings. (Visit the **US Preventive Services Task Force** for recommended clinical preventive services). This guide discusses how to find effective policy, system, and environmental change approaches, as well as programs and curricula that are delivered to individuals and groups (such as school-based health education programs). It identifies several registries of evidence-based strategies designed to improve physical and mental health outcomes, as well as the social and economic factors that impact health.

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Guide to evidence-based prevention

Part 1. What is "evidence-based prevention?"

The term "evidence-based" is used in two different ways in the context of prevention and public health. First, "evidence-based practice" and "evidence-based public health" are broad terms, often used interchangeably, that refer to the process of using scientific evidence to identify health problems and effective health improvement strategies. The following definition, which has been adopted by the Public Health Accreditation Board (PHAB)[1], embraces this broad understanding of the use of evidence in public health practice:

> **Evidence-based practice** (Brownson, et. al, 2009). Evidence-based practice involves making decisions on the basis of the best available scientific evidence, using data and information systems systematically, applying program-planning frameworks, engaging the community in decision making, conducting sound evaluation, and disseminating what is learned.[2] Note: This definition can also be applied to evidence-based *public health*.

The term "evidence based" is also used as a "seal of approval" to indicate that a specific program or strategy has been evaluated and proven to be effective in improving health. This "seal of approval" can be given by academic researchers, expert panels or government agencies that have reviewed evidence about the program, or independent organizations that rate the effectiveness of programs. The following definition refers to this more specific use of the term "evidence based," which is the primary focus of this online guide:

> **Evidence-based prevention strategy** (HPIO, 2013). Programs, policies or other strategies that have been evaluated and demonstrated to be effective in preventing health problems based upon the best-available research evidence, rather than upon personal belief or anecdotal evidence.

Criteria for classifying a program, policy or other strategy as "evidence-based" vary across disciplines and agencies, which can make it challenging for policymakers and prevention planners to determine which strategies they should implement. Regardless of these challenges, however, evidence about the effectiveness of prevention strategies should be an important factor in policymaking decisions, and evidence-based practice is a foundational public health capability. (See Public Health Accreditation Board (PHAB) **Domain 10 Evidence-Based Practice and Standard 10.1** regarding the identification and use of best available evidence.)

When done well, evidence-based practice increases the effectiveness, efficiency and accountability of public health interventions by steering resources toward "what really works" based on expert evidence, while also providing space for innovative development and evaluation of new strategies informed by the experiences of community members and front-line practitioners.

Three concepts are useful for understanding what is meant by the term "evidence based:"
1. **Types of evidence that inform decision making**: Best available research evidence, experiential evidence, and contextual evidence
2. **Level of effectiveness in reaching desired outcomes:** Continuum from highly effective to ineffective or harmful
3. **Strength of scientific evidence:** Continuum from well-supported through rigorous research methods to undetermined programs that have not yet been evaluated.

The next two sections of this guide describe these concepts.

Types of evidence that inform decision making

Research-based evidence of effectiveness is very important to consider when selecting prevention strategies to fund and implement. Many other factors, however, impact the success of public health activities, such as cultural appropriateness, how well the strategy fits with community conditions, and the availability of adequate resources to implement the strategy. Good decision making, therefore, balances research-based evidence with experiential evidence and contextual evidence (see Figures 1a and 1b). Experiential evidence refers to professional insight and intuitive expertise that is accumulated over time. Contextual evidence is based on factors that address whether a strategy is useful and feasible for a particular community.[3] A well-designed policymaking or community health planning process will acknowledge and incorporate these three types of evidence.

Level of effectiveness and strength of scientific evidence

Research-based evidence can tell us if a prevention strategy has been shown to be highly effective, moderately effective, or ineffective in achieving its desired outcomes. This is referred to as level of effectiveness. In order to assess the quality and meaningfulness of research-based evidence, the strength of the scientific evidence must also be considered. The strength of scientific evidence refers to how rigorously a program has been evaluated and how strong the evidence is that the program produced the desired outcomes, rather than other factors. *The Continuum of Evidence of Effectiveness*[5] provides a useful framework for understanding level of effectiveness and strength of

Figure 1a.
A framework for thinking about evidence[4]

Best available research evidence

Evidence-based decision making

Experiential evidence

Contextual evidence

Figure 1b.
Local community health improvement plan example

Best available research evidence

Recommendations from the *Community Guide* and *What Works for Health*

Evidence-based decision making

Experiential evidence

Contextual evidence

Expertise and experience of planning team

Information about community preferences and readiness, available funding, political will and coordination with relevant stakeholders
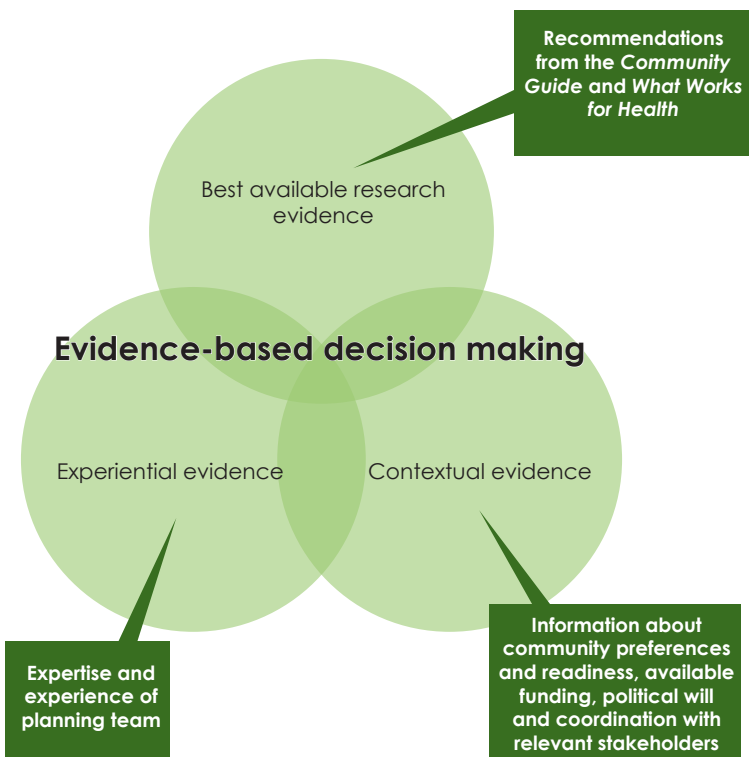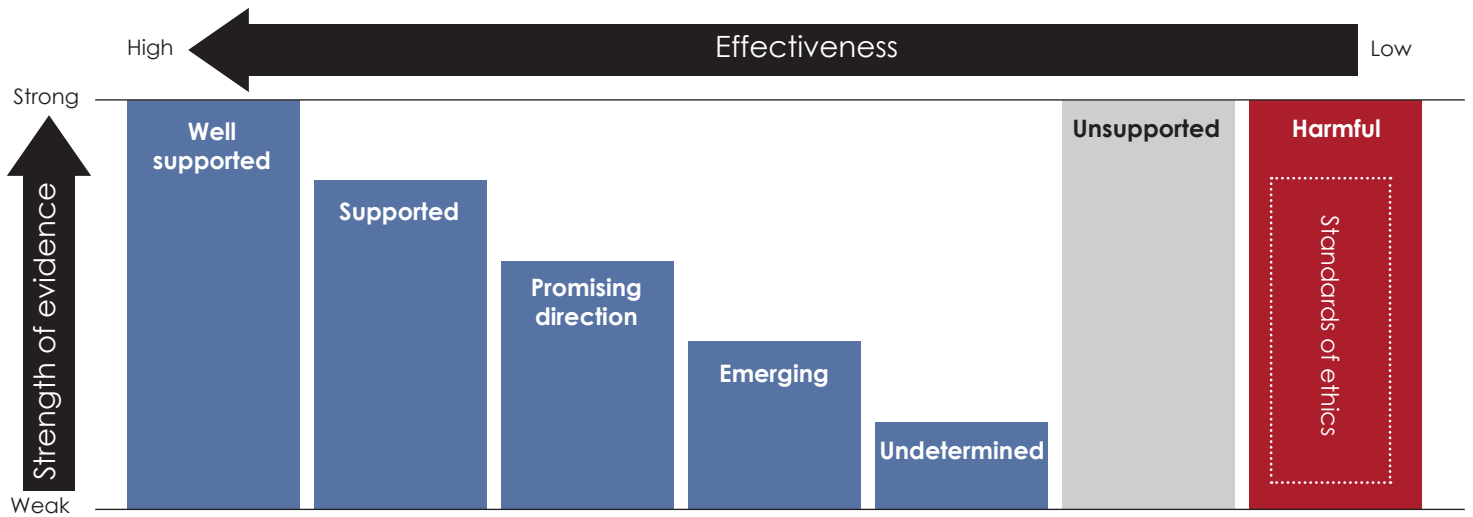
Figure 2.
Continuum of evidence of effectiveness

Source: Puddy, R.W. and Wilkins, N. (2011). Understanding Evidence Part 1: Best Available Research Evidence. A Guide to the Continuum of Evidence of Effectiveness. US Centers for Disease Control and Prevention.
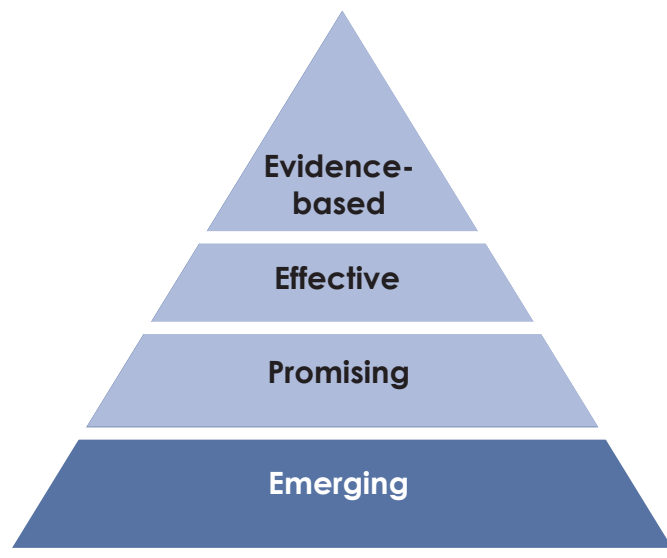
evidence (See Figure 2).

Systematic reviews and evidence registries typically combine the two concepts of effectiveness and strength of evidence in order to categorize prevention strategies and make recommendations. Programs that have strong evidence demonstrating that they are effective in achieving outcomes are generally classified as "evidence based," but may also be referred to as a "best practice," "well supported," or a "model program." Programs that have been shown to be effective through less rigorous evaluation methods are often referred to as "promising," "emerging," "innovative," or "untested." Figure 3

Figure 3.
Terms commonly used to classify prevention strategies by level of effectiveness and strength of scientific evidence

Source: Brownson, Fielding and Maylahn. *Evidence-based public health: A fundamental concept for public health practice.* Annual Review of Public Health. 2009.

displays a well-recognized typology for classifying interventions by level of scientific evidence on the left and related terms that are often used in prevention practice guidelines on the right. Figure 4 lists several credible registries of evidence-based prevention programs and displays the terms they use to classify programs along the continuum of evidence of effectiveness. This analysis highlights the range of terms used by expert panels, government agencies, and other organizations that make recommendations about prevention

Figure 4.

Evidence of effectiveness categories used by online prevention evidence registries

Online evidence registry	Evidence of Effectiveness*		
	Well Supported or Supported	Promising Direction, Emerging, or Undetermined	Unsupported or Harmful
Guide to Community Preventive Services (Community Guide) *Comprehensive range of health-related topics*	• Recommended-Strong evidence • Recommended-Sufficient evidence	Insufficient evidence	Recommended against
What Works for Health *Comprehensive range of health-related topics*	• Scientifically supported • Some evidence	• Expert opinion • Insufficient evidence • Mixed evidence	Evidence of ineffectiveness
National Registry of Evidence-based Programs and Practices (NREPP) *Mental health promotion, substance abuse prevention, mental health and substance abuse treatment*	NREPP rates programs based upon quality of research and readiness for dissemination. NREPP does not recommend specific programs or rate their overall effectiveness.		
Promising Practices Network *Child and adolescent physical and mental health, school success, juvenile justice, and poverty*	Proven program	Promising program	
California Evidence-Based Clearinghouse for Child Welfare *Child welfare, mental health, and early childhood intervention*	• Well-supported by research evidence • Supported by research evidence	Promising research evidence	• Evidence fails to demonstrate effect • Not able to be rated • Concerning practice
Blueprints for Healthy Youth Development *Youth behavior, education, emotional well-being, health, and positive relationships*	• Promising programs • Model programs		
What Works Clearinghouse** *Education (early childhood, K-12 and post-secondary)*	Positive	• Potentially positive • Mixed	• No discernible effect • Potentially negative • Negative
Crimesolutions.gov *Criminal justice, juvenile justice, and crime victim services*	Effective	Promising	No effects
Public Health Law Research — Evidence Briefs *Physical and mental health and housing*	Effective	Uncertain	Harmful
Office of Juvenile Justice and Delinquency Prevention (OJJDP) Model Programs Guide *Juvenile justice, delinquency prevention mental health, violence prevention, and school success*	• Exemplary • Effective	Promising	
Research-tested Intervention Programs (RTIPs) *Cancer screening, nutrition, physical activity, tobacco, sun safety and other aspects of cancer control*	RTIPs rates each intervention on a five-point scale for three categories: Research integrity, intervention impact and dissemination capability		

*Based upon the *Continuum of Evidence of Effectiveness.* Puddy, R.W. and Wilkins, N. (2011). *Understanding Evidence Part 1: Best Available Research Evidence. A Guide to the Continuum of Evidence of Effectiveness.* US Centers for Disease Control and Prevention. http://www.cdc.gov/violenceprevention/pdf/understanding_evidence-a.pdf
**In addition to assigning an Effectiveness Rating (shown above), What Works Clearinghouse also rates programs based upon an Improvement index and an Extent of Evidence classification.

programs.

Limitations and challenges of "research-based" evidence

Despite its value for improving the efficiency and effectiveness of public health prevention, there are several shortcomings to the way "research-based" evidence is sometimes used in planning and policymaking. First, rigid requirements to only fund evidence-based interventions may stifle innovation and authentic community engagement. Second, a narrow focus on highly rigorous research methods (such as randomized control trials and other experimental designs) tends to side-line or undervalue approaches that are implemented at the population level (such as policy change) and primary prevention efforts that require a long time period to achieve outcomes. Unlike evidence-based medicine which is based upon studies in highly-controlled clinical settings, evidence-based public health draws upon research conducted in complex real-world conditions that often do not allow for control groups or other aspects of experimental designs that help to pin-point the impact of a specific intervention. Similarly, evidence ratings and registries such as NREPP have largely focused on "programs in a box" that are delivered to individuals or groups (often in school and social service settings) and are easily evaluated using traditional pre/post-intervention research methods. Policy, system, and environmental change approaches, however, are more difficult to evaluate and are therefore less prominent in many systematic reviews and evidence registries.

When implementing programs or strategies classified as "evidence-based," public health professionals must balance two priorities: fidelity and community fit. Fidelity refers to the extent to which a program is implemented as intended. High fidelity occurs when a program is replicated using the same methods, protocols, population groups, and settings that were in place when the program was evaluated and found to be effective. Clear implementation guidance — such as a training manual, policy templates, or other documentation—is critical for effective replication. Community fit and socio-cultural relevance refer to the extent to which a program is compatible with cultural beliefs, local community norms, and participant needs and interests. A program developed for inner-city African American students in a classroom setting, for example, may need to be modified in order to be effective for rural White youth in a 4-H Club setting. The ability to adapt an evidence-based approach to fit unique community settings and needs—while maintaining the core elements of the strategy that make it effective—is an important aspect of evidence-based public health practice.

Notes

1. Public Health Accreditation Board (PHAB) Acronyms and Glossary of Terms, Version 1.0. 2011.
2. Brownson, Fielding and Maylahn. Evidence-based public health: A fundamental concept for public health practice. Annual Review of Public Health. 2009.
3. Puddy, R.W. and Wilkins, N. (2011). Understanding Evidence Part 1: Best Available Research Evidence. A Guide to the Continuum of Evidence of Effectiveness. US Centers for Disease Control and Prevention. http://www.cdc.gov/violenceprevention/pdf/understanding_evidence-a.pdf
4. Ibid.
5. Idid.

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Part 2. How to navigate sources of evidence

There are numerous systematic reviews and online registries of evidence-based prevention strategies. Each has its benefits and drawbacks, and no one source is complete. It can therefore be challenging to sort out which of these sources has the most credible information and is the best fit for a decision-making process. Figure 5 below displays the types of sources where available evidence on prevention strategies can typically be found.

Figure 5.

Sources of evidence-based strategies

Type of source	Examples	Rigor, credibility, and strength of evidence	Ease of use
Systematic reviews A literature review that attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria.[10] Systematic reviews of randomized controlled trials are considered the "gold standard" of evidence.	• Guide to Community Preventive Services (Community Guide) • US Preventive Services Task Force recommendations (USPSTF) • The Cochrane Collaborative • The Campbell Collaboration Library of Systematic Reviews	High	Moderate
Peer-reviewed literature Articles and reports that have gone through a formal process to assess quality, accuracy, and validity.	Articles published in academic and scientific journals, such as the *American Journal of Public Health, American Journal of Preventive Medicine* or the *New England Journal of Medicine.* Many can be accessed online through PubMed, Medline, Google Scholar, etc.	Moderate to high	Low
Searchable databases and evidence registries Online clearinghouses designed to disseminate information about evidence-informed strategies in a user-friendly format. These databases use specific criteria to screen programs and policies, and most also rate strategies on the strength of their available evidence of effectiveness (such as, scientifically supported, some evidence, insufficient evidence, evidence of ineffectiveness).	• What Works for Health (County Health Rankings and Roadmaps)* • National Registry of Evidence-Based Programs and Practices (NREPP) • Research-tested Intervention Programs (RTIPs)* • Promising Practices Network — Programs That Work* • California Evidence-based Clearinghouse for Child Welfare* • What Works Clearinghouse* • Blueprints for Health Youth Development* • Public Health Law Research — Evidence briefs* • Crimesolutions.gov* • Office of Juvenile Justice and Delinquency Prevention (OJJDP) Model Programs Guide* *Provide evidence-of-effectiveness ratings	Moderate to high	High
Grey literature Electronic or print format documents produced by government agencies, academic institutions, and other organizations not controlled by commercial publishing.[11]	• Recommendations from expert panels, such as the Institute of Medicine (IOM) and the National Prevention, Health Promotion, and Public Health Council • Reports from federal agencies such as the US Centers for Disease Control (CDC) and Prevention or the US Department of Health and Human Services (HHS) • Reports from nonpartisan organizations, such as the Association of State and Territorial Health Officials (ASTHO), the RAND Corporation, Prevention Institute, PolicyLink, and Trust for America's Health	Varies widely	Moderate

Source: Modified from Searching the Evidence, County Health Rankings and Roadmaps. http://www.countyhealthrankings.org/sites/default/files/CHOOSE_CHRR%20Searching%20the%20Evidence.pdf (accessed 9/9/13)

Where to start

When considering prevention strategies to implement in community settings (rather than clinical settings), including policy and environmental change approaches, as well as programs that are delivered to individuals, the following sources are excellent places to start (see Figure 6):

• The Community Guide (US Centers for Disease Control and Prevention)
• What Works for Health (County Health Rankings and Roadmaps)
• Topic-specific recommendations from expert panels and other "grey literature"
• Topic-specific evidence registries

As a rigorous systematic review, the US Centers for Disease Control and Prevention's Community Guide is considered to be the "gold standard" source for evidence-based public health interventions in community settings. Not all topics, however, are covered by the Community Guide so it is useful to refer to multiple sources. The What Works for Health online evidence registry covers a broader range of topics and, along with other online evidence registries and recommendations from expert panels, makes an excellent supplement to the Community Guide. The Community Guide and What Works for Health stand out among sources of evidence for being comprehensive (addressing a wide range of health-related topics), including policy and environmental change approaches, and being easy to use. Starting with these sources and then supplementing them with additional materials, such as reports from expert panels and other grey literature, is an excellent first step.

Clarifying goals and narrowing scope

Defining the goals for a prevention strategy and the scope of the search will help to narrow down the types of sources to consult. Key considerations include:

1. **Time and expertise.** It can be time-consuming to comb through peer-reviewed literature or through some of the systematic review databases such as the Cochrane Collaborative and Campbell Collaborative. Websites such as the Community Guide and What Works for Health, however, are designed to be user-friendly and do not require a great deal of time or expertise to use.

2. **Desired outcomes and goals.** Is the aim to reduce risk factors or increase protective factors, or to decrease the prevalence of a disease or condition? Being clear about specific desired outcomes will help to guide the search for evidence. For example, the Community Guide includes sections on obesity and cardiovascular disease (health conditions), but also has recommendations for physical activity and nutrition which address the risk and protective factors, behaviors, and community conditions that affect obesity and cardiovascular disease.

3. **Type of health issue to be addressed.** Many grey literature reports and searchable databases focus on specific diseases or health conditions, such as cancer, asthma, violence, or drug and alcohol use. Some sources address the social determinants of health. For example, the Campbell Collaboration specializes in crime, justice, education, and social welfare, and the Promising Practices Network reviews programs that address school readiness and poverty. The Community Guide includes recommendations for health equity and What Works for Health reviews a comprehensive set of programs and policies designed to address social and economic factors.

4. **Type of approach and setting.** Some sources, such as the USPSTF recommendations, only include preventive services for clinical settings, such as screening, counseling, and preventive medications. The Community Guide and What Works for Health include a wide range of approaches, including behavioral and educational programs delivered in community and health care settings, and policy, system, and environmental change strategies.

Online registries, expert panels, and systematic reviews always address a specific scope of topics and intended uses; rather than including the universe of all prevention activities, they narrow the range of programs and strategies they will assess. Figure 7 displays a framework for

understanding how the scope and content of online evidence registries varies depending upon the types of outcomes being addressed, intervention approaches being used, and settings for the programs and strategies they include.

For more information about the steps involved in selecting prevention strategies, including an Ohio case study, view the following publication prepared by the Health Policy Institute of Ohio and the Ohio Department of Health: **Evidence in Action: A guide to selecting effective prevention strategies**.

Figure 6.
Where to start your search for evidence-based prevention strategies for community settings

1 The Community Guide
The Guide to Community Preventive Services, US Centers for Disease Control and Prevention

Systematic review of broad strategies and general types of interventions for the following topics:

- Asthma
- Birth defects
- Cancer
- Cardiovascular disease
- Diabetes
- HIV/AIDS, STIs, pregnancy
- Obesity

- Adolescent health
- Mental health
- Oral health

- Motor vehicle injury
- Violence

- Alcohol — Excessive consumption
- Nutrition
- Physical activity
- Tobacco

- Emergency preparedness
- Health communication
- Vaccination
- Worksite

- Health equity
- Social environment

2 What Works for Health
County Health Rankings and Roadmaps, Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute

Comprehensive rating database of strategies, programs, and policies for the following topics:

Clinical Care
- Access to care
- Quality of care

Health Behaviors
- Tobacco use
- Diet & exercise
- Alcohol use
- Sexual activity

Social & Economic Factors
- Education
- Employment
- Income
- Family & social support
- Community safety

Physical Environment
- Environmental quality
- Built environment

3 Topic-specific recommendations and evidence registries

Recommendations from expert panels
Such as reports from:
- Institute of Medicine (IOM)
- National Prevention, Health Promotion, and Public Health Council

Examples include:
- IOM report *Accelerating Progress in Obesity Prevention*
- IOM report *Preventing Mental, Emotional, and Behavioral Disorders Among Young People*
- *National Prevention Strategy*

Recommendations from other "grey literature"
From federal agencies/ offices such as:
- CDC
- HHS
- US Surgeon General

From nonpartisan organizations such as:
- ASTHO
- RAND Corporation
- Prevention Institute
- PolicyLink
- ChangeLab Solutions
- Trust for America's Health

Topic-specific database and evidence ratings
Examples include:
- What Works for Health (County Health Rankings and Roadmaps)*
- National Registry of Evidence-Based Programs and Practices (NREPP)
- Research-tested Intervention Programs (RTIPs)*
- Promising Practices Network — Programs That Work*
- California Evidence-based Clearinghouse for Child Welfare*
- What Works Clearinghouse*
- Blueprints for Healthy Youth Development*
- Public Health Law Research — Evidence briefs*
- Crimesolutions.gov*
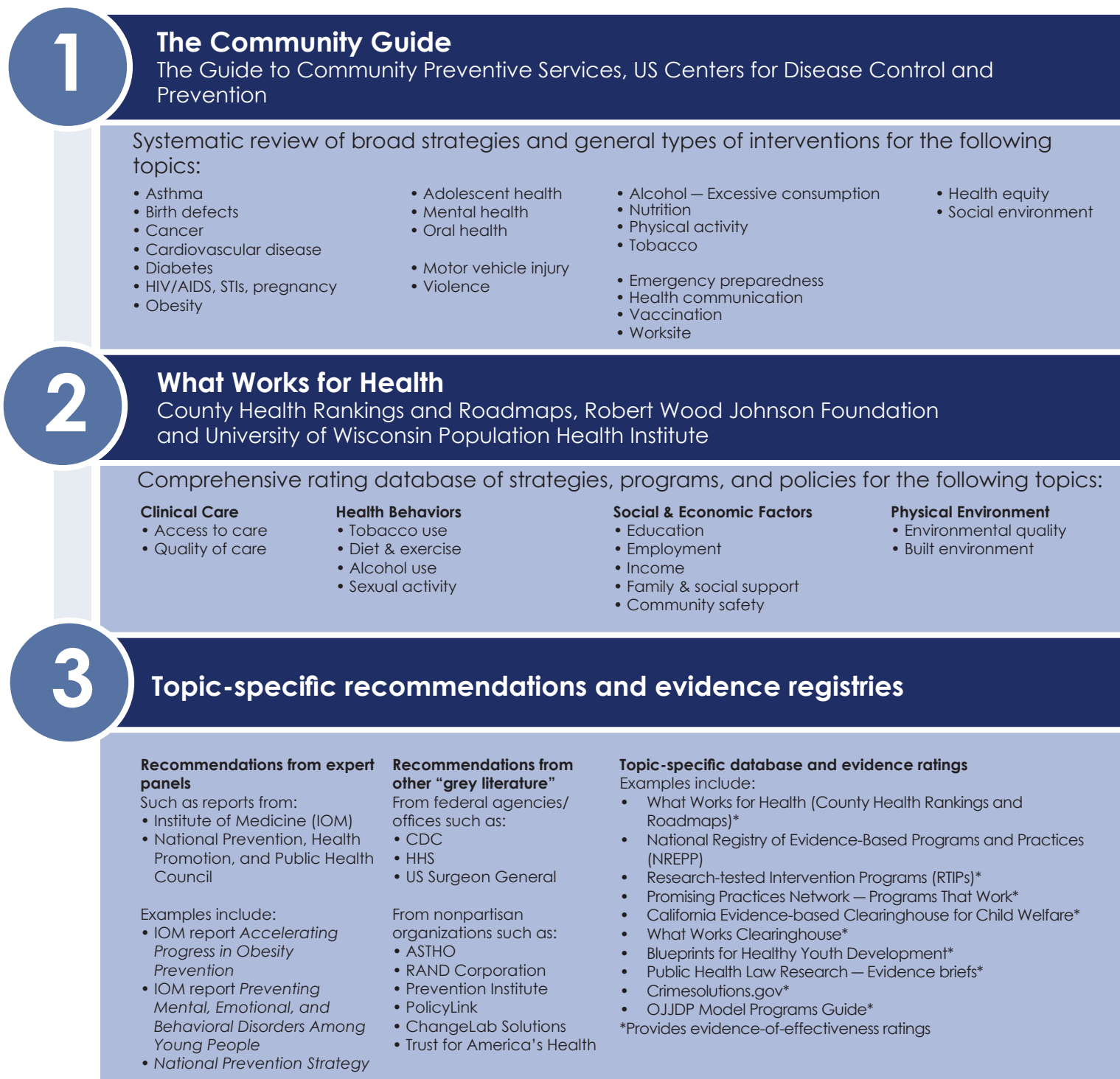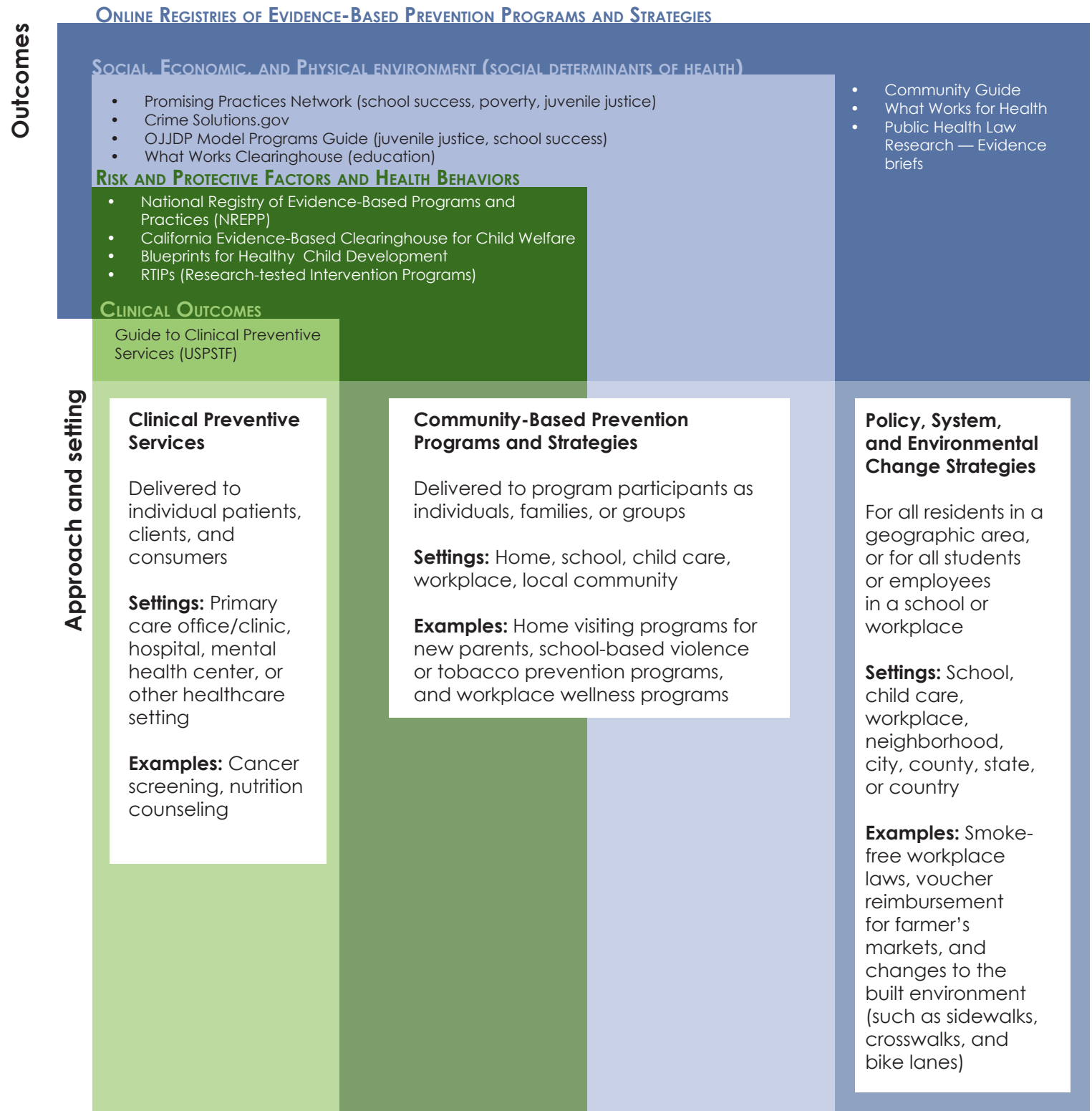- OJJDP Model Programs Guide*

*Provides evidence-of-effectiveness ratings

Figure 7.

Outcomes, approaches and settings addressed by online registries of evidence-based programs and strategies

Outcomes

ONLINE REGISTRIES OF EVIDENCE-BASED PREVENTION PROGRAMS AND STRATEGIES

SOCIAL, ECONOMIC, AND PHYSICAL ENVIRONMENT (SOCIAL DETERMINANTS OF HEALTH)

- Promising Practices Network (school success, poverty, juvenile justice)
- Crime Solutions.gov
- OJJDP Model Programs Guide (juvenile justice, school success)
- What Works Clearinghouse (education)

- Community Guide
- What Works for Health
- Public Health Law Research — Evidence briefs

RISK AND PROTECTIVE FACTORS AND HEALTH BEHAVIORS

- National Registry of Evidence-Based Programs and Practices (NREPP)
- California Evidence-Based Clearinghouse for Child Welfare
- Blueprints for Healthy Child Development
- RTIPs (Research-tested Intervention Programs)

CLINICAL OUTCOMES

Guide to Clinical Preventive Services (USPSTF)

Approach and setting

Clinical Preventive Services

Delivered to individual patients, clients, and consumers

Settings: Primary care office/clinic, hospital, mental health center, or other healthcare setting

Examples: Cancer screening, nutrition counseling

Community-Based Prevention Programs and Strategies

Delivered to program participants as individuals, families, or groups

Settings: Home, school, child care, workplace, local community

Examples: Home visiting programs for new parents, school-based violence or tobacco prevention programs, and workplace wellness programs

Policy, System, and Environmental Change Strategies

For all residents in a geographic area, or for all students or employees in a school or workplace

Settings: School, child care, workplace, neighborhood, city, county, state, or country

Examples: Smoke-free workplace laws, voucher reimbursement for farmer's markets, and changes to the built environment (such as sidewalks, crosswalks, and bike lanes)

Notes

10. The Cochrane Library: About Cochrane Systematic Reviews and Protocols. http://www.thecochranelibrary.com/view/0/AboutCochraneSystematicReviews.html (accessed 9/9/13)
11. GreyNet International: Grey Literature Network Service. http://www.greynet.org/ (accessed 9/9/13)

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Part 3. One-stop guide to evidence for Ohio's prevention priorities

The following matrix lists priority areas from the **National Prevention Strategy**, related prevention priorities from Ohio's **2012-2014 State Health Improvement Plan** and sources of evidence-based strategies that meet the following criteria:

- Nationally-recognized credible source recommended as a "go-to" or "gold standard" resource by Ohio subject-matter experts
- User-friendly website or report that lists specific recommended strategies that can be implemented in a community setting, including policy and environmental change approaches

Figure 8.

Credible and user-friendly sources of evidence-based prevention

National Prevention Strategy priorities	*Related State Health Improvement Plan* prevention priority for Ohio	**Most credible and user-friendly sources for prevention strategies in the community setting** (click titles for links)
Tobacco free living	Chronic disease	• **Community Guide**: Click on "Tobacco" • **What Works for Health**: Click on "Tobacco use" • **Best Practices for Comprehensive Tobacco Control Programs, Centers for Disease Control and Prevention (2007)**: Downloadable report
Preventing drug abuse and excessive alcohol use	None	• **Community Guide**: Click on "Alcohol — excessive consumption" • **What Works for Health**: Click on "Alcohol use" and "Community safety" • **National Registry of Evidence-Based Programs and Practices (NREPP)**: Use advanced search function to find interventions by areas of interest, outcome categories, settings, and population characteristics • **Preventing Mental, Emotional, and Behavioral Disorders Among Young People** (2009 IOM report): Downloadable report
Healthy eating	Chronic disease	• **What Works for Health**: Click on "Diet and exercise" • **Accelerating Progress in Obesity Prevention** (2012 IOM report): Downloadable report • **Community Guide**: Click on "Nutrition," "Obesity," and "Cardiovascular disease" • **USDA Nutrition Evidence Library**: Systematic reviews on specific nutrition topics • **HPIO Crosswalk**: Recommended strategies to promote healthy eating
Active living	Chronic disease	• **Community Guide**: Click on "Physical activity," "Obesity," "Cardiovascular disease" • **What Works for Health**: Click on "Diet and exercise" • **Accelerating Progress in Obesity Prevention** (2012 IOM report): Downloadable report • **Strategies to Increase Physical Activity Among Youth** (2012 DHHS report): Downloadable report • **HPIO crosswalk**: Recommended strategies to promote physical activity
Injury and violence free living	Injury and violence	• **Community Guide**: Click on "Motor vehicle injury" and "Violence" • **What Works for Health**: Click on "Community safety," "Health behaviors," "Social and economic factors," or use keyword search • **Blueprints for Healthy Youth Development** (includes healthy relationships and violence prevention): Click on "program search" • **CDC: Effective and Promising Practices** — **Child Maltreatment**: Lists effective programs • **National Registry of Evidence-Based Programs and Practices (NREPP)**: Use advanced search function to find interventions by areas of interest, outcome categories, settings, and population characteristics • **CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults, 2nd Edition**: Downloadable report • Also see "Preventing drug abuse" category
Reproductive and sexual health	Infant mortality/ premature birth	• **Community Guide**: Click on "HIV/AIDS, STIs, pregnancy;" or "Birth defects" • **What Works for Health**: Click on "Sexual activity," "Family and social support," "Access to care," "Income," or use keyword search • **Teen Pregnancy Prevention** — **Evidence-based Programs Database:** Lists effective programs

Figure 8.
Credible and user-friendly sources of evidence-based prevention (cont.)

National Prevention Strategy priorities	Related State Health Improvement Plan prevention Priority for Ohio	Most credible and user-friendly sources for prevention strategies in the community setting (click titles for links)
Mental and emotional wellbeing	Integration of physical and behavioral health care	• **Community Guide**: Click on "Mental health" • **What Works for Health**: Click on "Family and social support," "Access to care," "Community safety," "Built environment," or use keyword search • **Preventing Mental, Emotional, and Behavioral Disorders Among Young People** (2009 IOM report): Downloadable report • **National Registry of Evidence-Based Programs & Practices (NREPP)**: Use advanced search function to find interventions by areas of interest, outcome categories, settings, and population characteristics • **Suicide Prevention Resource Center Best Practice Registry**: Lists effective programs • Also see "Preventing drug abuse" category
Not applicable	Infectious disease	• **Community Guide**: Click on "HIV/AIDS, STIs, and pregnancy" or "Vaccination" • **What Works for Health**:Click on "Sexual activity," Access to care" or use keyword search • **Program Operations Guidelines for STD Prevention: Community and Individual Behavior Change Interventions**: Downloadable report

The following organizations provided subject-matter expertise for compiling the above sources:
- Alcohol and Drug Abuse Prevention Association of Ohio
- Bureau of Infectious Diseases, Ohio Department of Health
- Drug Free Action Alliance
- Ohio Academy of Nutrition and Dietetics
- Ohio Adolescent Health Partnership
- Ohio Chronic Disease Workgroup
- Ohio Collaborative to Prevent Infant Mortality
- Ohio Injury Prevention Partnership
- Ohio Mental Health and Addiction
- Ohio Sexual and Intimate Parter Violence Prevention Consortium Services (OMHAS)
- Tobacco Free Ohio Alliance

Ohio's statewide plans to improve population health
- **Ohio 2012-2014 State Health Improvement Plan (SHIP)**
- **Ohio Department of Health 2013-2014 Strategic Plan**
- **Ohio's Commitment to Prevent Infant Mortality**
- **Ohio Injury Prevention Partnership, Child Injury Action Group Strategic Plan 2011-2016**
- **Ohio Injury Prevention Partnership, Ohio Older Adult Falls Prevention Coalition State Plan 2010-2014**
- **Pathways in Prevention: A Roadmap for Change: Ohio's Plan for Sexual and Intimate Partner Violence Prevention**
- **Ohio Prescription Drug Abuse Task Force, Final Report Task Force Recommendations**
- **Ohio Suicide Prevention Foundation Strategic Plan 2013-2016**
- **Ohio Comprehensive Cancer Control Plan 2011-2014**
- **Ohio Adolescent Health Strategic Plan**
- **Ohio's Plan to Prevent and Reduce Chronic Disease: 2014-2018**
- **Ohio Strategic Prevention Framework (Ohio Mental Health and Addiction Services)**
- **Interagency Prevention Consortium Strategic Enhancement Plan (Ohio Mental Health and Addiction Services)**
- **Transforming Payment for a Healthier Ohio, Ohio's State Health Care Innovation Plan**

Ohio's statewide prevention organizations
Using the National Prevention Strategy as a framework for prevention topics, the following "family tree" maps out statewide organizations that focus on prevention and are membership organizations (or "umbrella" groups) that represent several smaller groups or local partners.

Click here for a family tree of Ohio prevention organizations (pdf, 11 pages)

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Part 4. Additional resources

Evidence-based public health online and in-person training courses

(**Note**: bolded titles are links)

- **Understanding Evidence**. Interactive website from the US Centers for Disease Control and Prevention.
- **Ohio Evidence-Based Public Health Course: Pathway to Accreditation**. In-person training program from the Prevention Research Center at Case Western Reserve University.
- **Evidence-Based Public Health Practice**. Online training course from the Center for Public Health Practice, Ohio State University College of Public Health.
- **A Roadmap to Implementing Evidence-based Programs**. Online training course from the National Registry of Evidence-based Programs and Practices (NREPP),

Links to systematic reviews and evidence registries

Systematic reviews

- **The Guide to Community Preventive Services** (Community Guide)
- **US Preventive Services Task Force (USPSTF) Recommendations**
- **The Cochrane Collaboration**
- **The Campbell Collaboration**
- **Health Evidence**

Evidence registries, searchable databases, and compendia

- **What Works for Health**
- **National Registry of Evidence-based Programs and Practices (NREPP)**
- **Promising Practices Network**
- **California Evidence-Based Clearinghouse for Child Welfare**
- **Blueprints for Healthy Youth Development**
- **What Works Clearinghouse**
- **Public Health Law Research** — **Evidence Briefs**
- **Office of Juvenile Justice and Delinquency Prevention (OJJDP) Model Programs Guide**
- **Research-tested Intervention Programs (RTIPs)**
- **The Compendium of Proven Community-Based Prevention Programs, 2013 Edition.** New York Academy of Medicine and Trust for America's Health.
- **National Prevention Strategy Implementation Toolkit.** Association of State and Territorial Health Officials (ASTHO).
- **USDA Nutrition Evidence Library**
- **CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults, 2nd Edition**
- **Teen Pregnancy Prevention** — **Evidence-based Programs Database**
- **Suicide Prevention Resource Center Best Practice Registry**
- **Program Operations Guidelines for STD Prevention: Community and Individual Behavior Change Interventions**
- **ENACT Local Policy Database**
- **National Association of County and City Health Officials (NACCHO) Model Practice Database**
- **Association of Maternal and Child Health Programs (AMCHP) Innovation Station**

Glossary

Definitions of terms used in this online guide:

Best available research evidence — Evidence used to determine whether or not a prevention program, practice, or policy is actually achieving the outcomes it aims to and in the way it intends. The more rigorous a study's research design, the more compelling the research evidence, indicating whether or not a program, practice, or policy is effectively preventing violence. (Source: Understanding Evidence — Glossary)

Contextual evidence — Contextual Evidence refers to information about whether or not a strategy "fits" with the context in which it is to be implemented. In other words, contextual evidence provides prevention practitioners with information on whether a strategy is feasible to implement, is useful, and is likely to be accepted by a particular community. (Source: Understanding Evidence — Glossary)

Credible — The source of the information contributes to how worthy it is of belief when compared to external (who and where it comes from) and internal (independent knowledge of the subject) criteria. (Source: Understanding Evidence — Glossary)

Evidence-based *prevention strategies* — Programs or policies that have been evaluated and demonstrated to be effective in preventing health problems based upon the best-available research evidence, rather than upon personal belief or anecdotal evidence. (Source: HPIO)

Evidence-based *practice* — Evidence-based practice involves making decisions on the basis of the best available scientific evidence, using data and information systems systematically, applying program-planning frameworks, engaging the community in decision making, conducting sound evaluation, and disseminating what is learned. Note: This is the definition adopted by the Public Health Accreditation Board (PHAB). (Source: Brownson, et. al, 2009)

Evidence-based *public health* — The process of integrating science-based interventions with community preferences to improve the health of populations. (Source: Kohatsu, et. al. 2004)

Experiential evidence — The collective experience and expertise of those who have practiced or lived in a particular setting. It also includes the knowledge of subject matter experts. This insight, understanding, skill and expertise is accumulated over time and is often referred to as intuitive or tacit knowledge. (Source: Understanding Evidence — Glossary)

Fidelity — The degree to which a program, practice, or policy is conducted in the way that it was intended to be conducted. This is particularly important during replication, where fidelity is the extent to which a program, practice, or policy being conducted in a new setting mirrors the way it was conducted in its original setting. (Source: Understanding Evidence — Glossary)

Grey literature — Electronic and print format documents produced by government agencies, academic institutions, and other organizations not controlled by commercial publishing. (Source: GreyNet International)

Implementation guidance — Resources such as training, coaching, technical assistance, manuals/guides, curricula, policy templates, or other documentation that help practitioners to implement a strategy as intended. Implementation guidance is typically created by the original developers of a program in order to facilitate replication. (Source: HPIO)

Peer-reviewed literature — Articles and reports that have gone through a formal process to assess quality, accuracy, and validity. (Source: HPIO)

Policy, system and environmental change (PSEC) — Policy, system and environmental change is a way to modify the environment to make healthy choices practical and available to all community members. See "**What is 'Policy, System, and Environmental Change'?**" fact sheet. (Source: Cook County Department of Public Health and the Public Health. Institute of Metropolitan Chicago)

Population health — The health outcomes of a group of individuals, including the distribution of such outcomes within the group. The field of population health focuses on the determinants of health (including medical care, public health interventions, social environment, physical environment, genetics, and individual behavior) and the policies and programs that influence those determinants and reduce health disparities among population groups. (Source: Kindig and Stoddart, 2003)

Prevention — A systematic process that promotes healthy behaviors and reduces the likelihood or frequency of an incident, condition, or illness. Ideally, prevention addresses health problems before they occur, rather than after people have shown signs of disease or injury. Prevention — A systematic process that promotes healthy behaviors and reduces the likelihood or frequency of an incident, condition, or illness. Ideally, prevention addresses health problems before they occur, rather than after people have shown signs of disease or injury. (Source: The Prevention Institute)

There are two commonly used systems for classifying levels of prevention. The first is based on the timing of prevention activity relative to the onset of the health problem: Primary, Secondary, and Tertiary. The second classification was developed in the field of substance abuse prevention and refers to the level of risk in the population addressed: Universal, Selected, and Indicated. See boxes on next page.

Levels of Prevention	Prevention Tiers
Primary — Methods to avoid the occurrence of disease. Primary prevention addresses problems before they occur rather than waiting to intervene after a condition or concern develops. Primary prevention often requires a shift from focusing on educating, counseling, or treating an individual towards addressing the broader physical, social, and economic environment. (Examples: safe sleep campaigns to prevent infant death; workplace policies to promote breastfeeding as a way to prevent childhood obesity)	**Universal** — Strategies offered to the full population, likely to provide some benefit to all. (Examples: social skills training for all children in a school district to prevent bullying and teen dating violence; addition of sidewalks and crosswalks to increase walkability and promote physical activity)
Secondary — Methods to diagnose and treat existent disease in early stages before it causes significant morbidity. Preventing the escalation of an existing problem. (Examples: breast, cervical, and colorectal screenings to identify cancer in early stages; HIV screening and antiretroviral therapy to prevent transmission to others)	**Selective** — Targeted to populations with above-average risk for the problem. (Examples: needle exchange programs for IV drug users to prevent HIV transmission; healthy corner store initiatives in poor neighborhoods with high rates of obesity)
Tertiary — Methods to reduce negative impact of extant disease by restoring function and reducing disease-related complications. Treatment or intervention for an existing injury, condition, or disease. (Examples: diabetes self-management class to prevent health complications from diabetes)	**Indicated** — Targeted to individuals with increased vulnerability or early signs of a problem, disease, or condition. (Examples: tobacco cessation early intervention for middle school students who have experimented with tobacco; strength and balance exercise classes for frail elderly)

Source: US National Library of Medicine   Source: U.S. Department of Health and Human Services

Public health — The science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society. Public health organizations include government agencies at the federal, state, and local levels, as well as nongovernmental organizations that are working to promote health and prevent disease and injury within entire communities or population groups. (Source: World Health Organization)

Quasi-experimental designs — Experiments based on sound theory, and typically have comparison groups (but no random assignment of participants to condition), and/or multiple measurement points (e.g., pre-post measures, longitudinal design). (Source: Understanding Evidence — Glossary)

Randomized control trial — A trial in which participants are assigned to control or experimental (receive strategy) groups at random, meaning that all members of the sample must have an equal chance of being selected for either the control or experimental groups (i.e. flipping a coin, where "heads" means participants are assigned to the control group and "tails" means they are assigned to the experimental group). This way, it can be assumed that the two groups are equivalent and there are no systematic differences between them, which increases the likelihood that any differences in outcomes are due to the program, practice, or policy and not some other variable(s) that the groups differ on. (Source: Understanding Evidence — Glossary)

Rigorous — Extremely thorough adherence to strict rules or discipline to ensure as accurate results as possible. (Source: Understanding Evidence — Glossary)

Systematic reviews — A literature review that attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria. Systematic reviews of randomized controlled trials are considered to the "gold standard" of evidence. (Source: The Cochrane Library)

The following glossaries include additional terms relevant to evidence-based prevention:
- **Understanding Evidence — Glossary**. US Centers for Disease Control and Prevention.
- **NREPP Glossary**. National Registry of Evidence-based Programs and Practices (NREPP), Substance Abuse and Mental Health Services Administration (SAMHSA).
- **Public Health Accreditation Board (PHAB) Acronyms and Glossary of Terms**. Version 1.0.
- **Prevention Policy and Advocacy Glossary**. Ohio Wellness and Prevention Network, Health Policy Institute of Ohio.