Selecting Effective Interventions
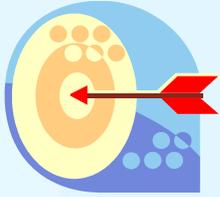
Presenter's Name

Presenter's Title

Title of Event

Date of Event

Learning Objectives

At the end of the training, participants will be able to:

- Draw a causal diagram to describe a noncommunicable disease (NCD) or risk factor

- Use the Community Guide to identify one evidence-based behavioral intervention and one policy, systems and environmental (PSE) intervention to address an NCD or risk factor

- For one selected intervention:

  - Describe how at least one behavioral theory or model has been applied

  - Describe how to adapt the intervention to local culture

  - Describe at least two non-evidence based factors that may impact the intervention

Lesson Overview

Selecting interventions

- Causal model

- Health Impact Pyramid

- Behavioral models and theories

Researching evidence-based interventions

- Community Guide

Considering non-evidence based decision-making factors

Selecting Interventions

- Different frameworks can help you decide on an appropriate intervention
  - Causal Pathway
  - CDC Health Impact Pyramid
  - Behavioral Theories and Models
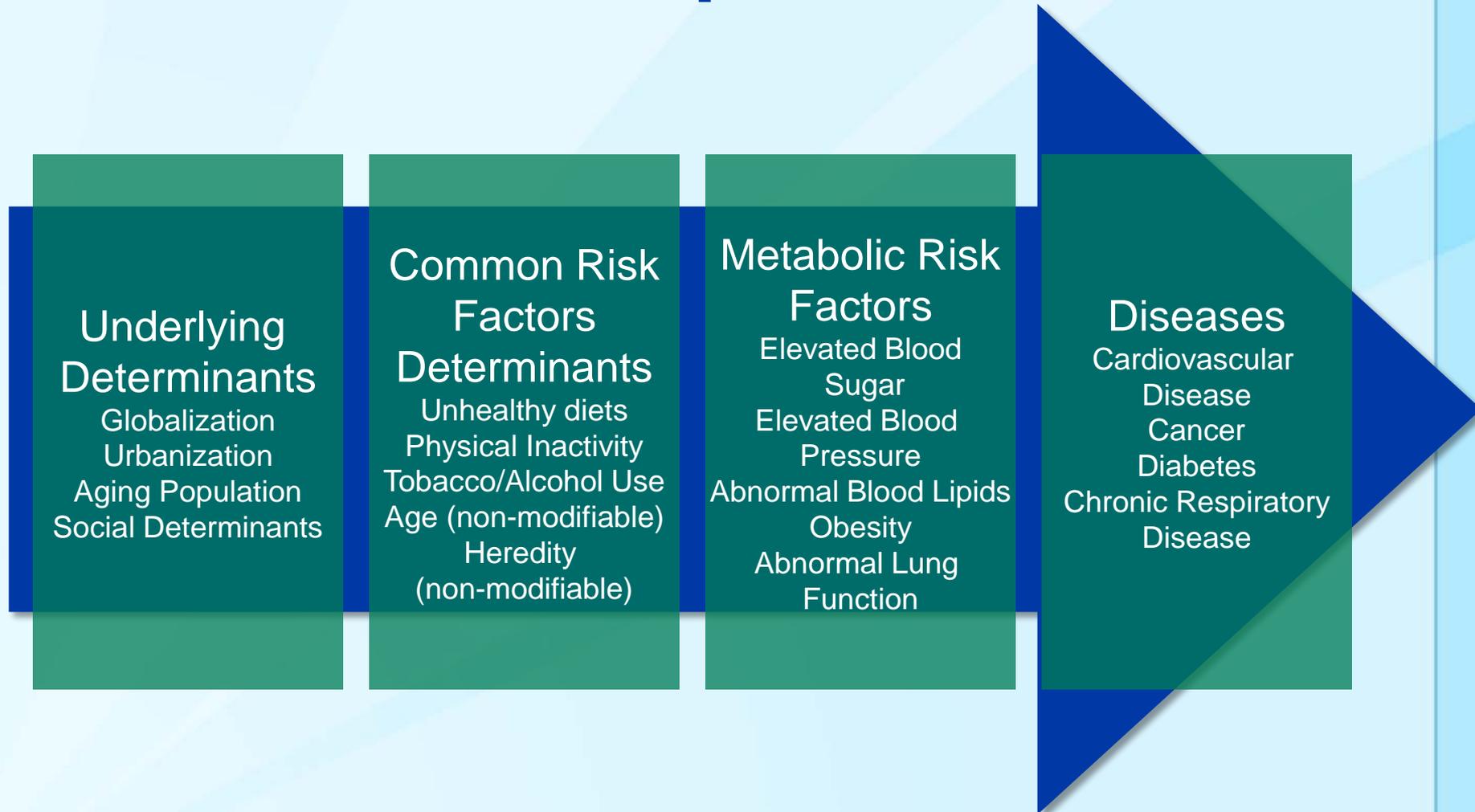- Evidence-based interventions can help you select effective interventions

Causal Methods

- Health professionals desire to understand the causes of disease

- With in-depth study of a disease and its risk factors, we can often identify the causal factors

- Many factors can be associated with a disease but are not causal

- Remember: Association $\neq$ Causation
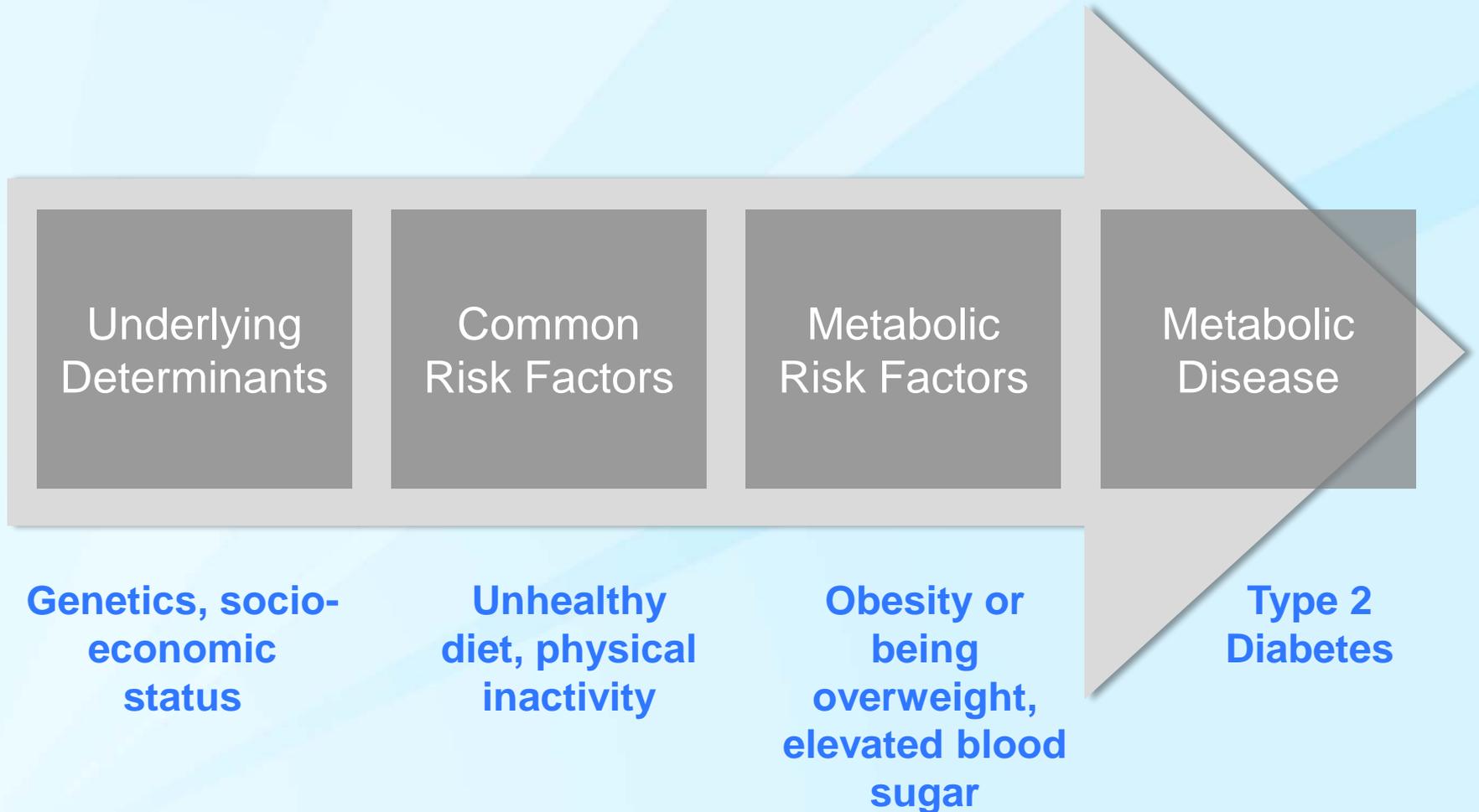
What is the Causal Pathway?

- Shows a visual representation of a hypothesis
- Shows the logical link behind a cause and an outcome
- Can be used to model diseases and treatments
- Can help program planners understand why a problem or risk factor is important

Causal Map for NCDs

Underlying Determinants
Globalization
Urbanization
Aging Population
Social Determinants

Common Risk Factors Determinants
Unhealthy diets
Physical Inactivity
Tobacco/Alcohol Use
Age (non-modifiable)
Heredity
(non-modifiable)

Metabolic Risk Factors
Elevated Blood Sugar
Elevated Blood Pressure
Abnormal Blood Lipids
Obesity
Abnormal Lung Function

Diseases
Cardiovascular Disease
Cancer
Diabetes
Chronic Respiratory Disease

Source: University of Washington, http://www.univ-sante.edu.kh/mekong_sante_2011/download/ncd/3-002.pdf

Create a Casual Map for Type 2 Diabetes

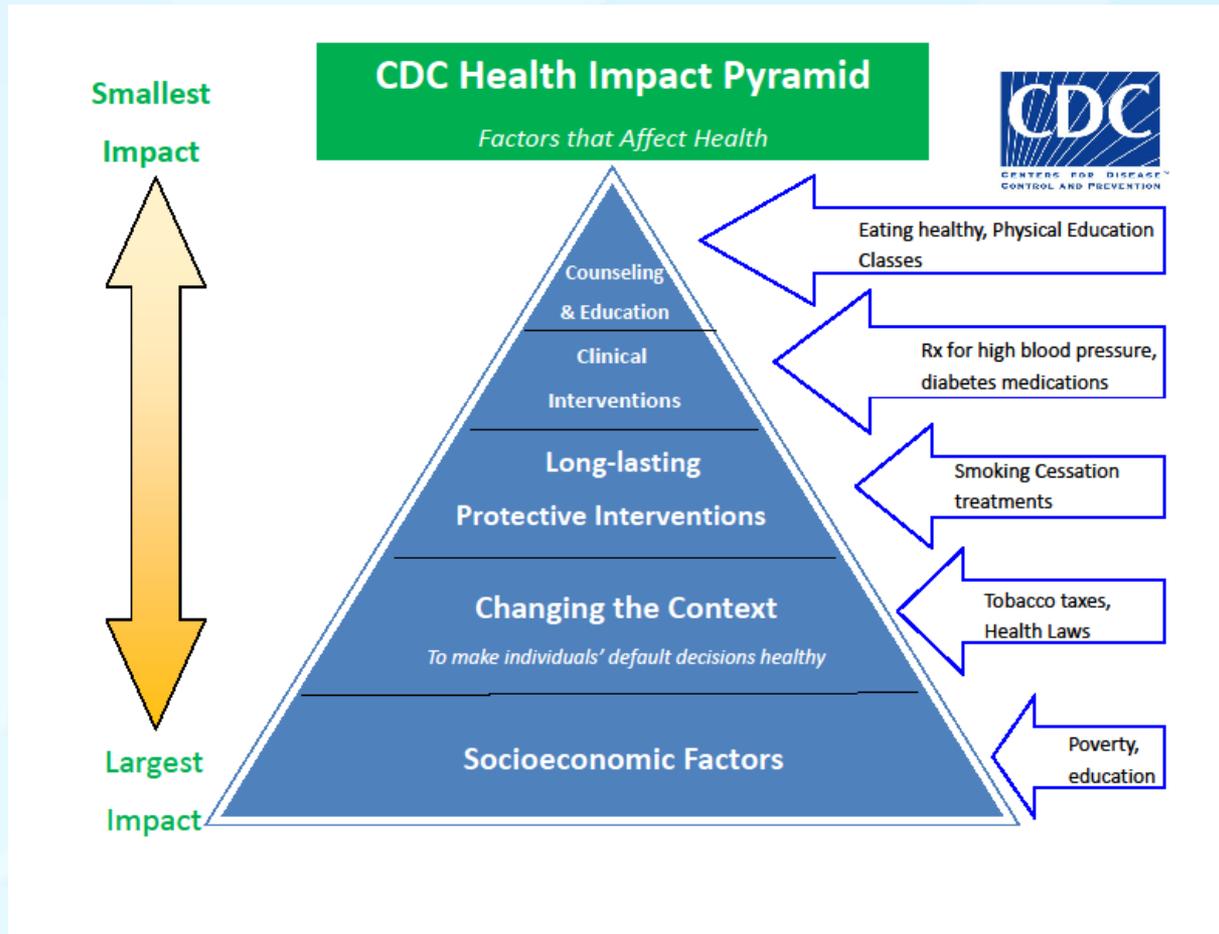| Underlying Determinants	Common Risk Factors	Metabolic Risk Factors	Metabolic Disease
Genetics, socio-economic status	**Unhealthy diet, physical inactivity**	**Obesity or being overweight, elevated blood sugar**	**Type 2 Diabetes**

Casual Mapping for Interventions

How will the intervention change the risk factors related to the NCD?

Unhealthy diet

Diabetes Self-Management Education

Lack of exercise

Obesity or being overweight

Health Impact Pyramid

Source: Frieden, T. A Framework for Public Heath Action: The Health Impact Pyramid. Am J Public Health. 2010; April; 100(4): 590–595.

Using the Health Impact Pyramid

Counseling
and
Education

Clinical
Interventions

Long-lasting
Protective Interventions

Changing the Context

Socioeconomic Factors

Source: Frieden, T. A Framework for Public Heath Action: The Health Impact Pyramid. Am J Public Health. 2010; April; 100(4): 590–595.

How Can You Apply Theory to Program Planning?

- Investigate "why", "what", and "how" health problems should be addressed

- Identify why people do or do not engage in certain health behaviors (e.g., lack of knowledge, social support, resources)

- Identify strategies that will have an impact and reach the right audience

Applying Behavioral Models and Theories to Interventions

- Behavioral models and theories give planners tools to design health behavior and health promotion interventions at 3 levels:
  - Individual
  - Interpersonal
  - Community

- To use these models and theories effectively, health practitioners must understand the target population (e.g., gender, age, geographic location)

Multi-Level Approach

- Effective interventions often address multiple levels: individual, interpersonal, and community

- An individual's health is shaped by many interactions (e.g., family, peers, coworkers, schools, environment)

Socio-ecological Model

Public Policy

Community

Institutional (Organizational)

Interpersonal

Individual
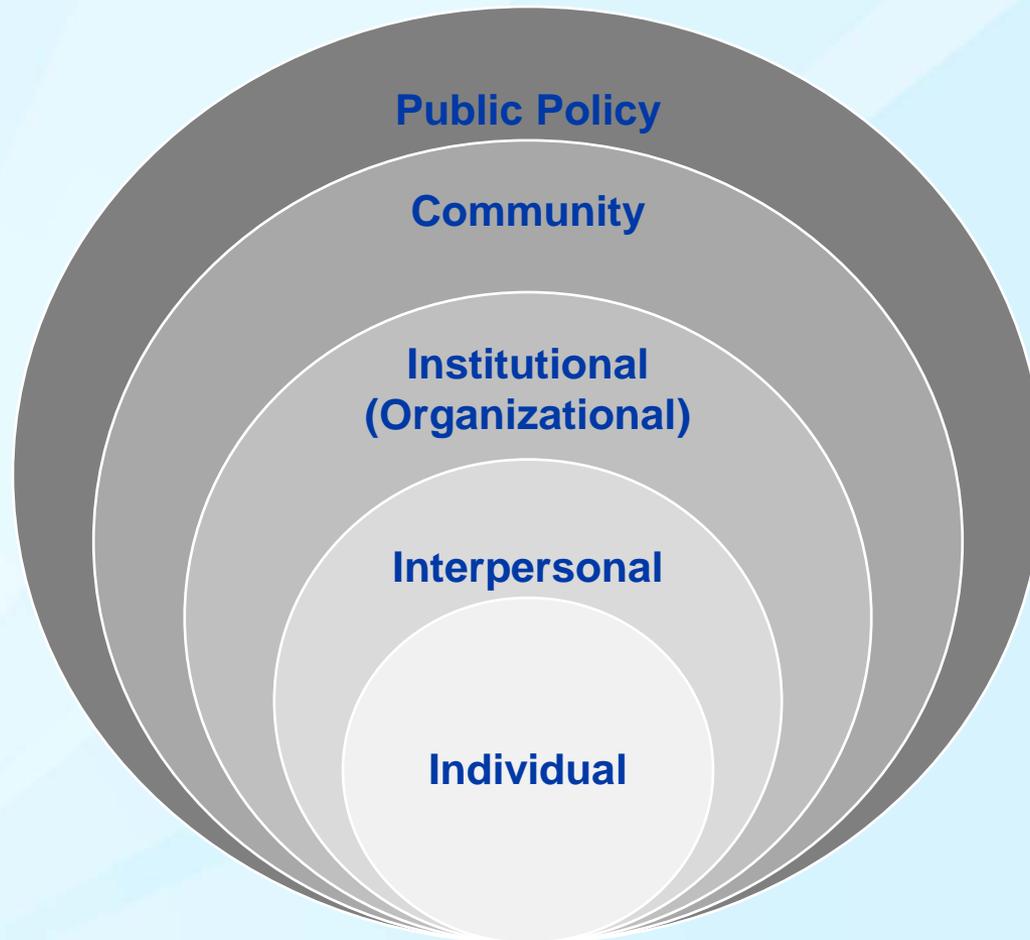
Adapted from: McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. Health Education Quarterly 15:351–377, 1988.

Key Concepts:
Socio-ecological Model

- Emphasizes the interaction between, and interdependence of, factors across all levels of a health problem (e.g., physical and sociocultural environments)

- Behavior both affects, and is affected by, multiple levels of influence

- An individual's behavior shapes and is shaped by the social and built/natural environment (*Reciprocal Causation)*

Behavioral Theories

- Individual Level: Stages of Change (Transtheoretical) Model

- Interpersonal Level: Social Cognitive Theory

- Community Level: Community Organization Model

Stages of Change Model

In adopting healthy behaviors or eliminating unhealthy ones, people progress through 5 levels related to their readiness to change:

1. Precontemplation
2. Contemplation
3. Preparation
4. Action
5. Maintenance

Source: Glanz, K, Rimer, B (1997) Theory at a Glance. Bethesda, MA: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute.

Social Cognitive Theory (SCT)

- People learn from their own experiences *and* by observing the actions of others and the benefits of those actions.

Behavior

Personal Factors

Environmental Factors
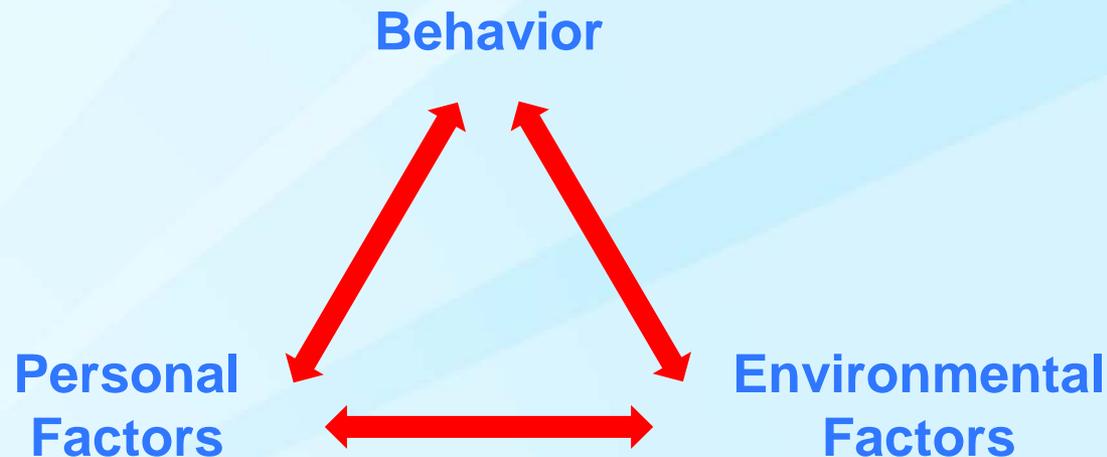
Source: Pajares (2002). Overview of social cognitive theory and of self-efficacy. 12-8-04. From http://www.emory.edu/EDUCATION/mfp/eff.html

Applying SCT

- Expectations
- Self-efficacy
- Observational learning (modeling)
- Reinforcements

Community Organization Model

- Public health workers help community identify health and social problems and develop plans to address these problems

- Active community participation is essential

- Three types:
    1. Social planning
    2. Social action
    3. Locality (community) development

Review of Behavioral Theories

Which theories should you apply when selecting interventions?

- What level of impact do you want to have?
- What theory is applicable for that level?
- What intervention can support that theory?

What is an Evidence-Based Intervention?

- Treatments or programs which are proven or tested to be effective

- How do you measure "effectiveness"?
  - Reductions or improvements in a measurable outcome
  - Application of the scientific method
  - % of your targeted population reached

Key Features of Evidence-Based Interventions

- Replication or duplication of results

- Consistency with other studies

- Outside review

Examples of Evidence-Based Interventions

- Recommending that women be screened every 3 years for cervical cancer

- Incorporating a physical exercise class in schools to prevent obesity

- Increasing local taxes on all tobacco products to prevent youth from smoking

How to Research Evidence-Based Interventions

- Community Guide
  - www.thecommunityguide.org

- World Health Organization (WHO) NCD Action Plan
  - http://www.who.int/nmh/publications/9789241597418/en/

- Cochrane Reviews
  - http://www.cochrane.org/cochrane-reviews

Community Guide

Systematic reviews are used to answer these questions:

1. Which program and policy interventions have been proven effective?

2. Are there effective interventions that are right for my community?

3. What might effective interventions cost?

4. What is the likely return on investment?

Why Use the Community Guide

- Finding answers

- Making decisions

- Obtaining support

More Information on the Community Guide

- www.thecommunityguide.org

- Home page

- Tabs:
  - Task Force Findings
  - Topics
  - Use the Community Guide
  - Methods
  - Resources

Using the Community Guide

Example of how to find recommended interventions for colorectal cancer prevention and control:

1. Click on "Cancer" under Topics.
2. Locate "Increasing Breast, Cervical, and Colorectal Cancer Screening" in the center of screen.
3. Click on "Client-Oriented Interventions"
4. Read the table on Task Force Recommendations & Findings and locate recommended interventions for colorectal cancer.
5. Click on "Client Reminders" and read the summary.

Activity: Using the Community Guide

1. Use the Community Guide to find evidence on interventions for **cardiovascular disease prevention and control**

2. Describe one recommended evidence-based behavioral intervention or one policy, systems & environmental (PSE) intervention

3. Provide a summary of evidence that supports implementing the intervention

Non-Evidence Based Decision-Making Considerations

- Resource constraints

- Feasibility

- Political support

- Cultural environment

Using Non-Evidence Based Factors in Selecting Interventions

- Do a systematic review of the non-evidence based factors for each potential intervention

- Involve stakeholders in the decision-making process

- Apply criteria to make a decision

Adapting the Intervention to Your Community

- Examine demographics of the problem to target the intervention

- Use the non-evidence based factors to inform your adaptations

- Consider implementation issues specific to your community

Skill Assessment

Your facilitator will provide you with an NCD or risk factor to use for this exercise.

You will spend approximately 1 hour with your assigned group to:

1. Draw a causal diagram to describe the NCD or risk factor.

2. Use the *Community Guide* to identify one evidence-based behavioral intervention and one policy, systems and environmental intervention to address the NCD or risk factor.

3. For one selected intervention:

    a. Describe how at least one behavioral theory or model has been applied.

    b. Describe how to adapt the intervention to local culture.

    c. Describe at least two non-evidence based factors that may impact the intervention.

Your group will **present** its findings to the rest of the class.

Resources: Page 1

The Community Guide. http://www.thecommunityguide.org/index.html

Frieden, T (2010) A Framework for Public Health Action: The Health Impact Pyramid. *American Journal of Public Health, 100 (4), 590 – 595.*

US Department of Health and Human Services. (2002) *Physical Activity Evaluation Handbook.* Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention.

Resources: Page 2

Hoehner, C, Soares, J, et al. (2008) Physical Activity Interventions in Latin America: A Systematic Review. *Am J Prev Med*.;34(3):224-233.

Glanz, K, Rimer, B (1997) *Theory at a Glance.* Bethesda, MA: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute.

McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. Health Education Quarterly 15:351–377, 1988.

Centers for Disease Control and Prevention (CDC). Selecting Effective Interventions. Atlanta, Georgia: Centers for Disease Control and Prevention (CDC); 2013.

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Visit: www.cdc.gov | Contact CDC at: 1-800-CDC-INFO or www.cdc.gov/info

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Department of Health and Human Services

Centers for Disease Control and Prevention