Introduction to Health Behavior Theories

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Medical Education and Research
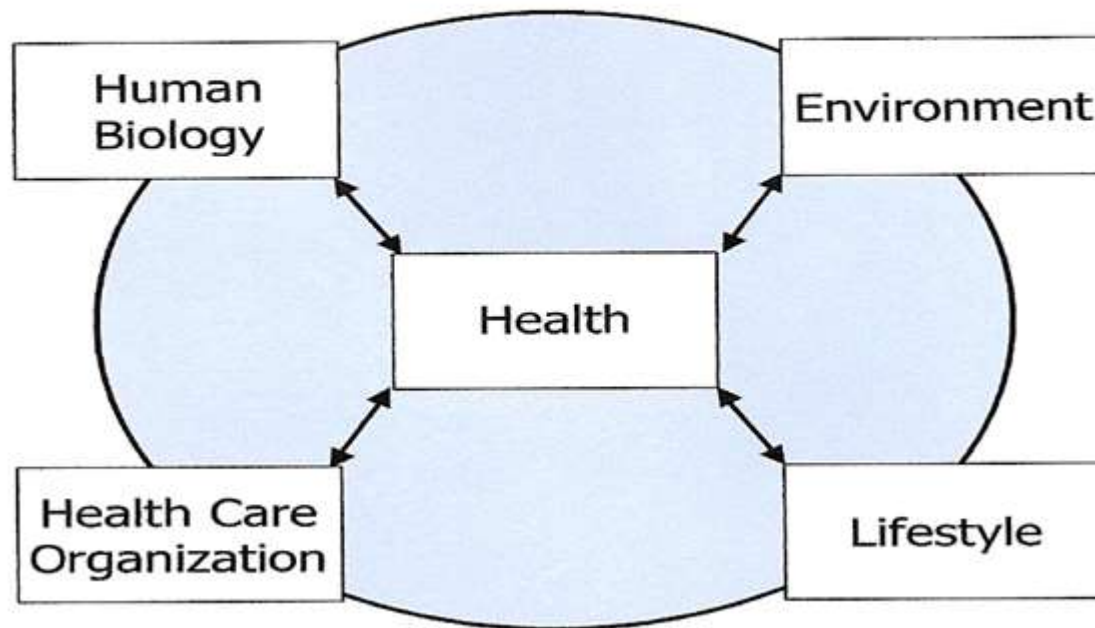
Training Course in Sexual and Reproductive Health Research

Geneva 2014

Outline

- Why focus on health behavior?
- What is health behavior science?
- Why study health behavior science?
  -- The linkage among theory, practice and research
- Level of influences – ecological perspectives
- Brief introduction to key health behavior theories at different level
  - Individual level
  - Interpersonal level
  - Community level
- Putting Theory and Practice together – Planning model
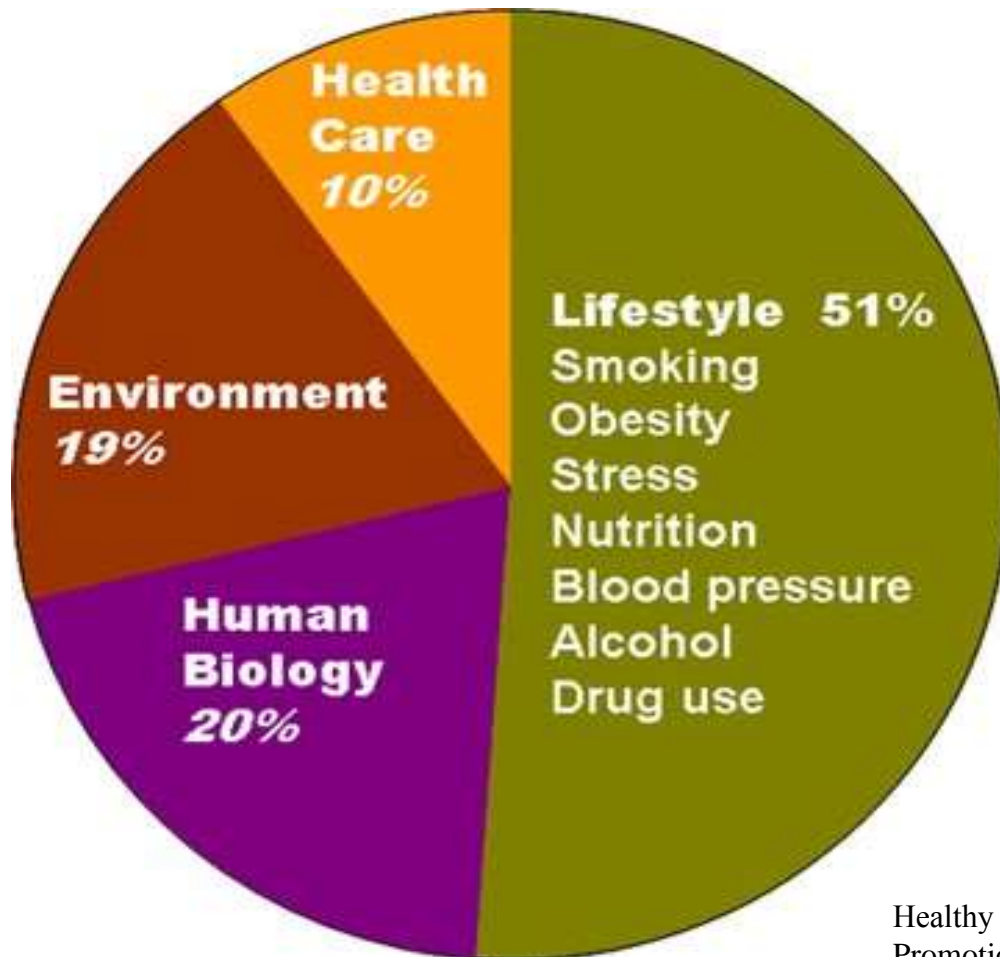- Using Theory to Plan Multilevel Interventions

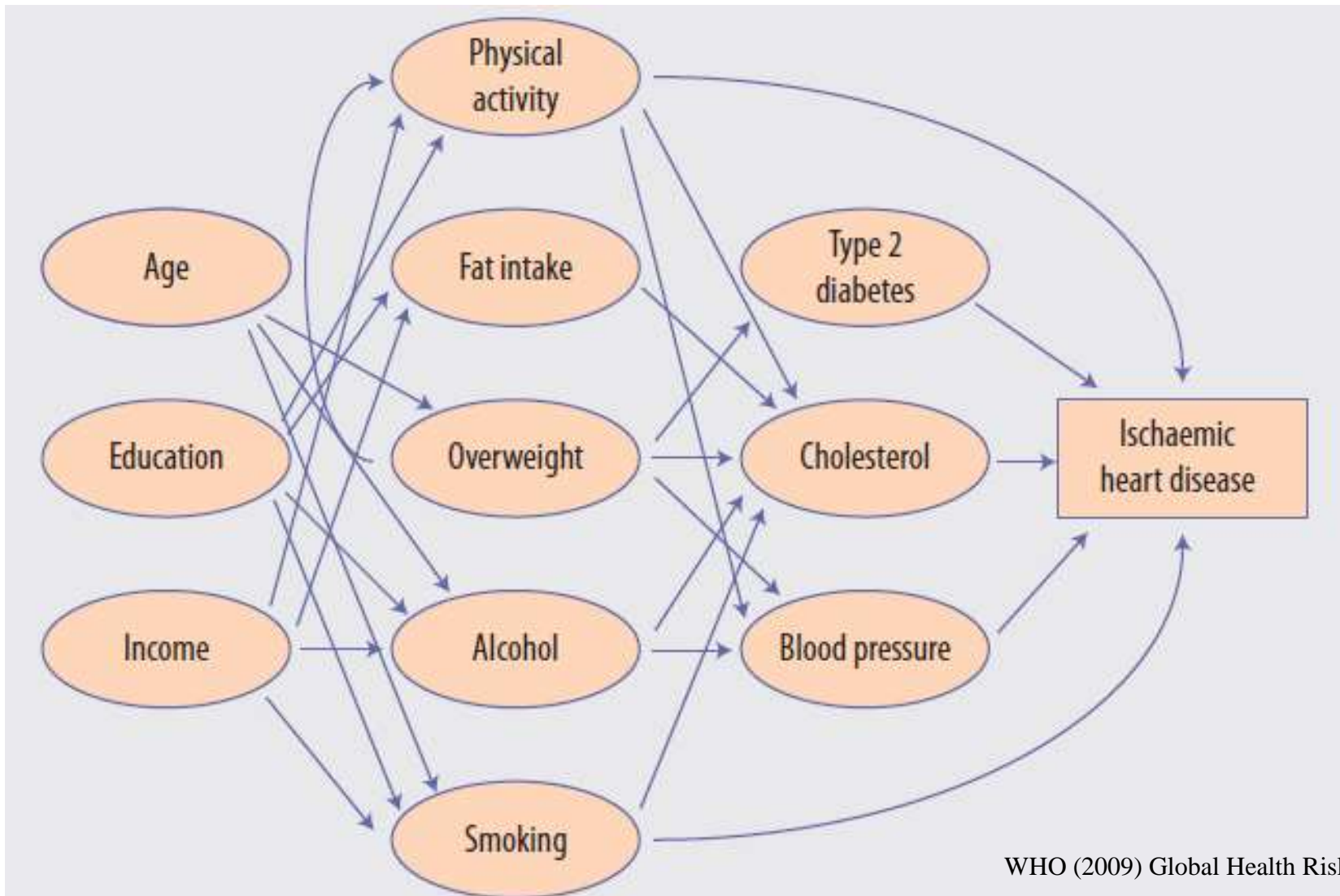# Determinants of Health

Lalonde Framework

Lalonde Report (1974) indicated four factors related to human health, lifestyle is the most important factor.

Factors that Contribute to Mortality

Health Care 10%

Environment 19%

Human Biology 20%

Lifestyle 51%
Smoking
Obesity
Stress
Nutrition
Blood pressure
Alcohol
Drug use

Healthy People: The Surgeon General's Report on Health
Promotion and Disease Prevention (1979)

The Causal Chain – major causes of ischemic heart disease

WHO (2009) Global Health Risk

Deaths attributed to 19 leading risk factors

Figure 6: Deaths attributed to 19 leading risk factors, by country income level, 2004.

Countries grouped by gross national income per capita – low income (US$ 825 or less), high income (US$ 10 066 or more).

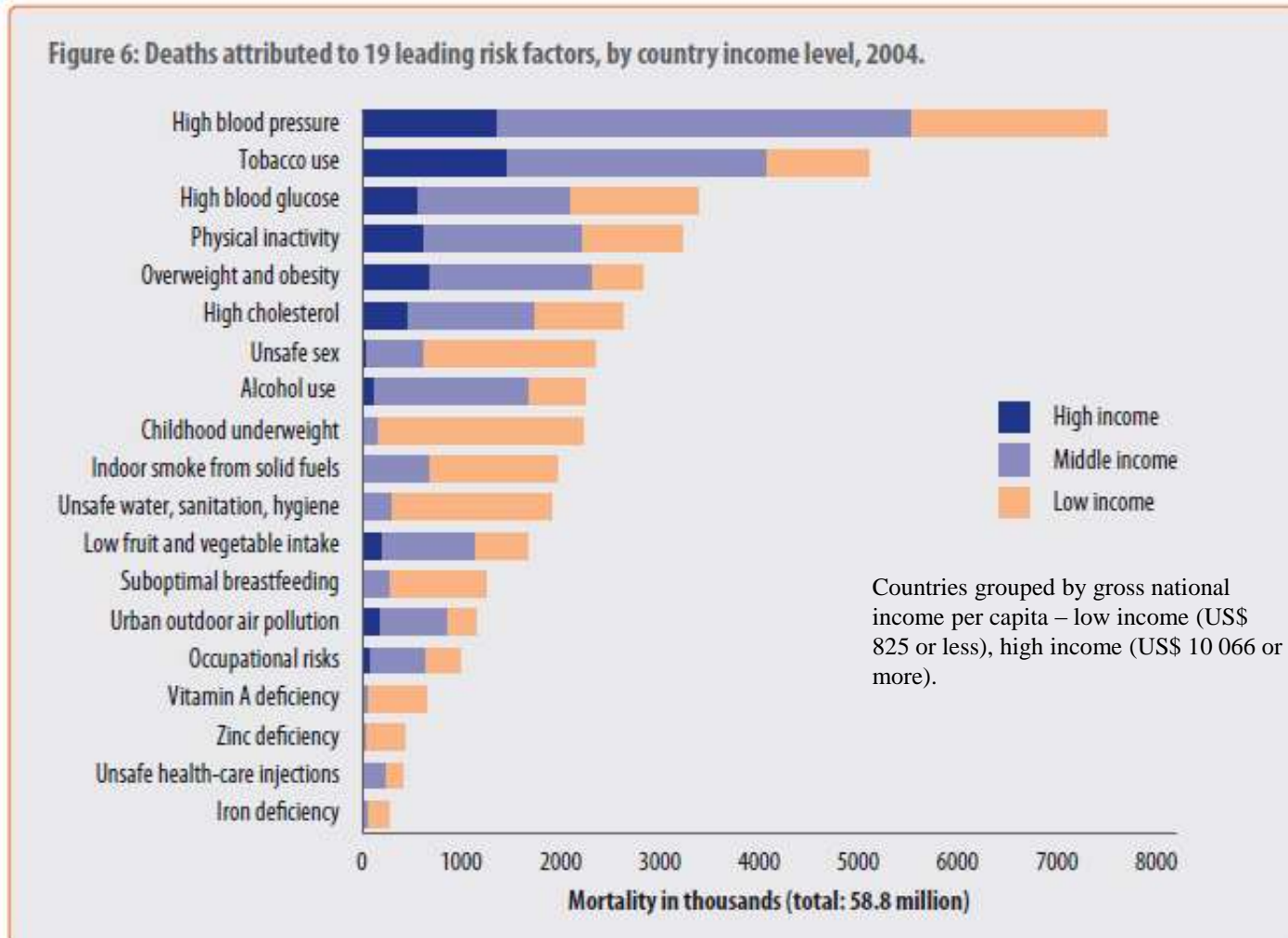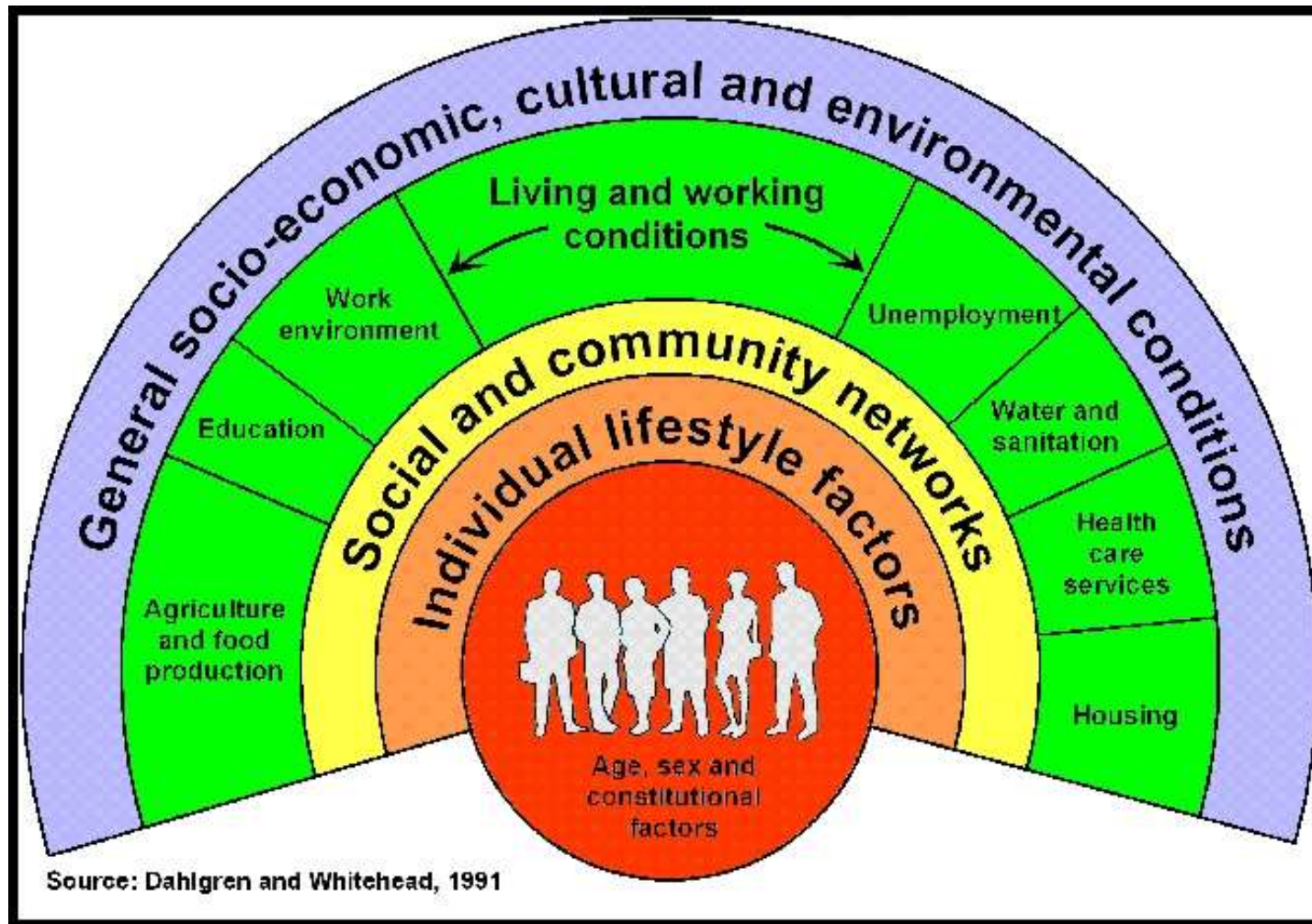Mortality in thousands (total: 58.8 million)

Table 1: Ranking of selected risk factors: 10 leading risk factor causes of death by income group, 2004

	Risk factor	Deaths (millions)	Percentage of total		Risk factor	Deaths (millions)	Percentage of total
	World				**Low-income countries[a]**		
1	High blood pressure	7.5	12.8	1	Childhood underweight	2.0	7.8
2	Tobacco use	5.1	8.7	2	High blood pressure	2.0	7.5
3	High blood glucose	3.4	5.8	3	Unsafe sex	1.7	6.6
4	Physical inactivity	3.2	5.5	4	Unsafe water, sanitation, hygiene	1.6	6.1
5	Overweight and obesity	2.8	4.8	5	High blood glucose	1.3	4.9
6	High cholesterol	2.6	4.5	6	Indoor smoke from solid fuels	1.3	4.8
7	Unsafe sex	2.4	4.0	7	Tobacco use	1.0	3.9
8	Alcohol use	2.3	3.8	8	Physical inactivity	1.0	3.8
9	Childhood underweight	2.2	3.8	9	Suboptimal breastfeeding	1.0	3.7
10	Indoor smoke from solid fuels	2.0	3.3	10	High cholesterol	0.9	3.4
	Middle-income countries[a]				**High-income countries[a]**		
1	High blood pressure	4.2	17.2	1	Tobacco use	1.5	17.9
2	Tobacco use	2.6	10.8	2	High blood pressure	1.4	16.8
3	Overweight and obesity	1.6	6.7	3	Overweight and obesity	0.7	8.4
4	Physical inactivity	1.6	6.6	4	Physical inactivity	0.6	7.7
5	Alcohol use	1.6	6.4	5	High blood glucose	0.6	7.0
6	High blood glucose	1.5	6.3	6	High cholesterol	0.5	5.8
7	High cholesterol	1.3	5.2	7	Low fruit and vegetable intake	0.2	2.5
8	Low fruit and vegetable intake	0.9	3.9	8	Urban outdoor air pollution	0.2	2.5
9	Indoor smoke from solid fuels	0.7	2.8	9	Alcohol use	0.1	1.6
10	Urban outdoor air pollution	0.7	2.8	10	Occupational risks	0.1	1.1

WHO (2009) Global Health Risk

Four Modifiable Health Risk Behaviors

- lack of physical activity

- poor nutrition

- tobacco use

- excessive alcohol consumption

- → accounted for almost one million deaths each year in US

Social Determinants of Health

Source: Dahlgren and Whitehead, 1991

- *Health starts where we live, learn, work and play*
  ~ RWJF(2010)

Whitehead M. & Dahlgren G. What can we do about inequalities in health? Lancet, 1991, 338: 1059-1063.

What is Health Behavior Science ?

- "Health Behavior Science" is an interdisciplinary science which aims to:
    - Understand and describe the nature of human behavior
    - Investigate the relationship between behavior and health
    - Find our the barriers and facilitators which influence behavior
    - Strengthen the theoretical background of health behavior
    - Develop the behavioral modification techniques
    - Formulate the health intervention or education plan
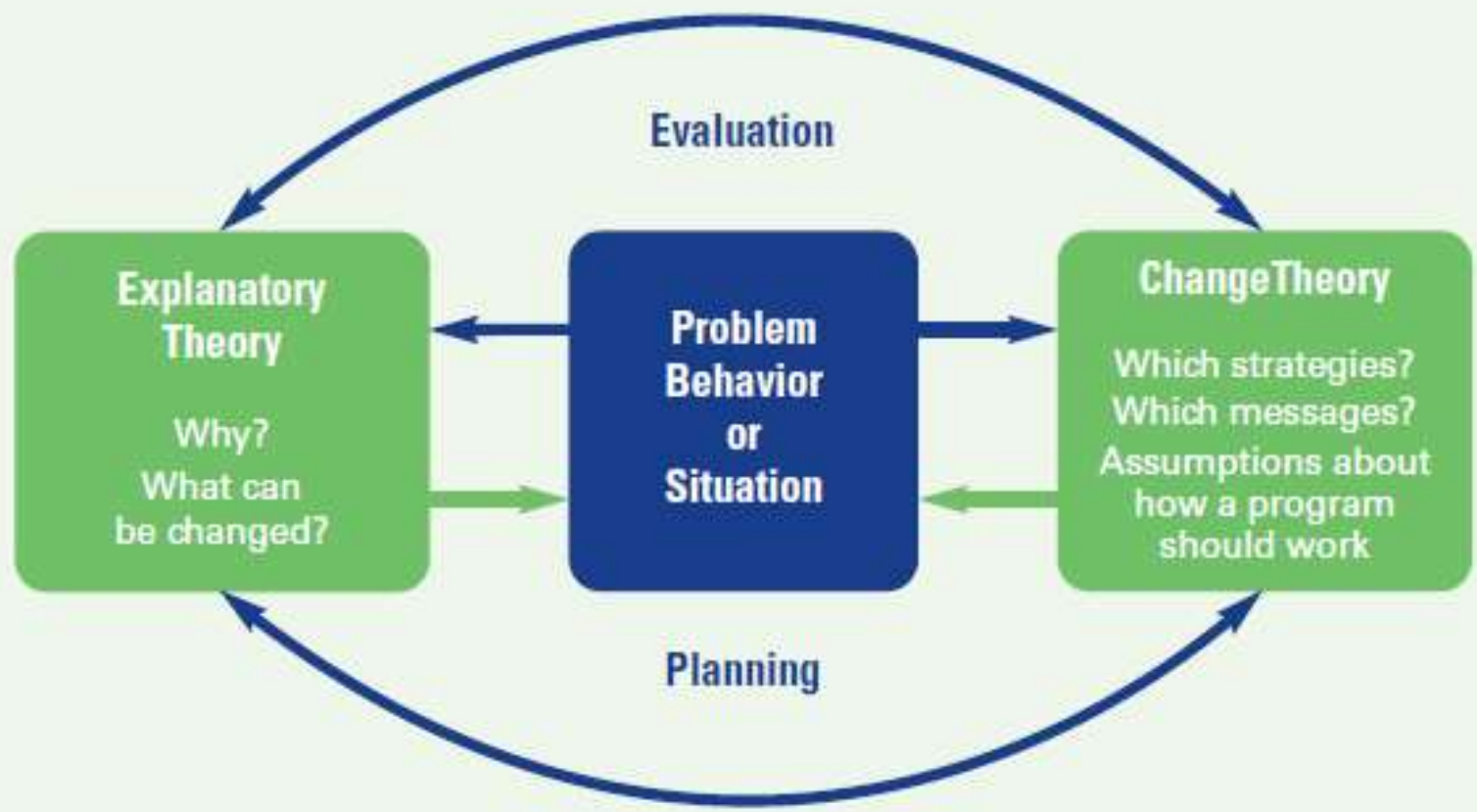   - Evaluate the effectiveness of intervention strategies

What is theory?

- A *theory* is a set of interrelated concepts, definitions, and propositions that presents a *systematic* view of events or situations by specifying relations among variables in order to *explain* and *predict* the events or situations.
  - Generality
  - Testability

Theory , Practice & Research

- "Theory" : we know why but not working.

- "Practice" : we don't know why but working anyway.

- "Research" — as the ground between theory and practice and the testing of theory in action

- The best theory is informed by practice; the best practice should be grounded in theory.

- An understanding of theory may guide users to measure more carefully and astutely in order to assess the impact of intervention. (Grol and others, 2007)

Figure 1. Using Explanatory Theory and Change Theory to Plan and Evaluate Programs

The Ecological Perspective:
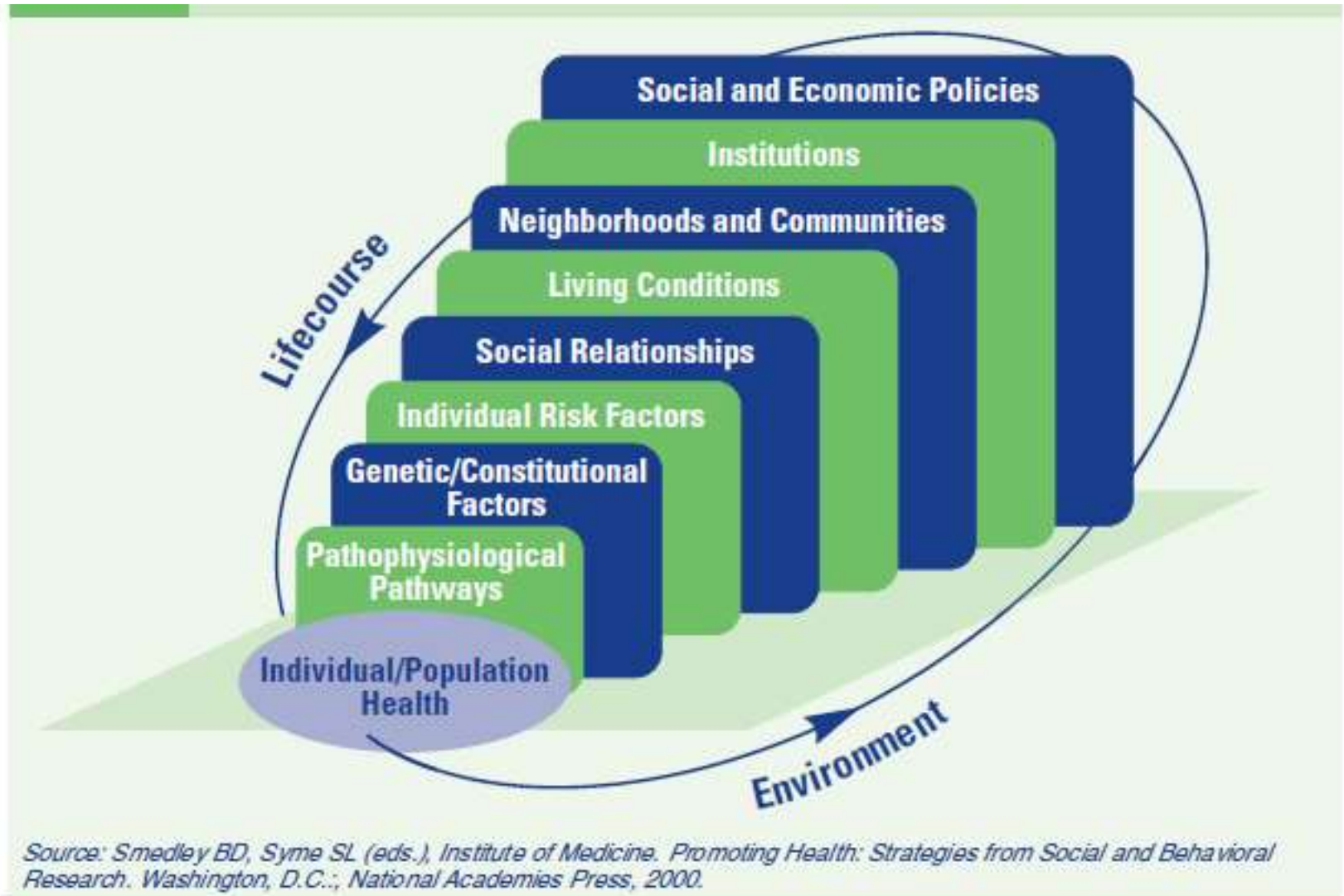# A Multilevel, Interactive Approach

Source: Smedley BD, Syme SL (eds.), Institute of Medicine. Promoting Health: Strategies from Social and Behavioral Research. Washington, D.C.; National Academies Press, 2000.

Table 1.	An Ecological Perspective: Levels of Influence

Concept	Definition
Intrapersonal Level	Individual characteristics that influence behavior, such as knowledge, attitudes, beliefs, and personality traits
Interpersonal Level	Interpersonal processes and primary groups, including family, friends, and peers that provide social identity, support, and role definition
Community Level Institutional Factors	Rules, regulations, policies, and informal structures, which may constrain or promote recommended behaviors
Community Factors	Social networks and norms, or standards, which exist as formal or informal among individuals, groups, and organizations
Public Policy	Local, state, and federal policies and laws that regulate or support healthy actions and practices for disease prevention, early detection, control, and management

Individual and Interpersonal Levels

- At the individual and interpersonal levels, contemporary theories of health behavior can be broadly categorized as "Cognitive-Behavioral." Three key concepts cut across these theories:

1. Behavior is mediated by cognitions; that is, what people know and think affects how they act.

2. Knowledge is necessary for, but not sufficient to produce, most behavior changes.

3. Perceptions, motivations, skills, and the social environment are key influences on behavior.

Some Individual Level Theories

- **The Health Belief Model (HBM)**
  - addresses the individual's perceptions of the threat posed by a health problem (susceptibility, severity), the benefits of avoiding the threat, and factors influencing the decision to act (barriers, cues to action, and self-efficacy).

- **The Stages of Change (Transtheoretical) Model**
  - describes individuals' motivation and readiness to change a behavior.

- **The Theory of Planned Behavior (TPB)**
  - examines the relations between an individual's beliefs, attitudes, intentions, behavior, and perceived control over that behavior.
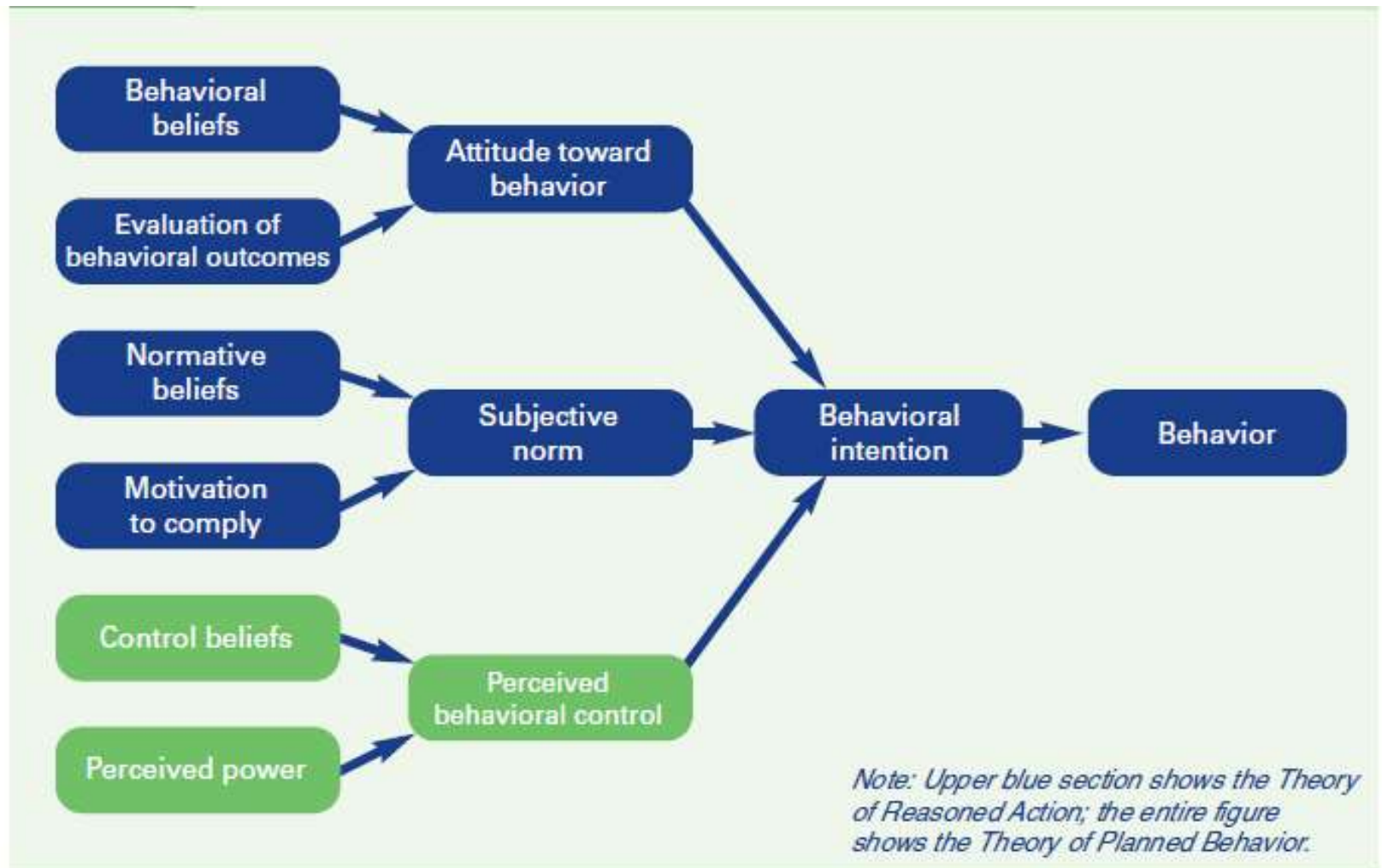
Health Belief Model

Concept	Definition	Potential Change Strategies
Perceived susceptibility	Beliefs about the chances of getting a condition	• Define what populations(s) are at risk and their levels of risk • Tailor risk information based on an individual's characteristics or behaviors • Help the individual develop an accurate perception of his or her own risk
Perceived severity	Beliefs about the seriousness of a condition and its consequences	• Specify the consequences of a condition and recommended action
Perceived benefits	Beliefs about the effectiveness of taking action to reduce risk or seriousness	• Explain how, where, and when to take action and what the potential positive results will be
Perceived barriers	Beliefs about the material and psychological costs of taking action	• Offer reassurance, incentives, and assistance; correct misinformation
Cues to action	Factors that activate "readiness to change"	• Provide "how to" information, promote awareness, and employ reminder systems
Self-efficacy	Confidence in one's ability to take action	• Provide training and guidance in performing action • Use progressive goal setting • Give verbal reinforcement • Demonstrate desired behaviors

Stage of Change Model

Stage	Definition	Potential Change Strategies
Precontemplation	Has no intention of taking action within the next six months	Increase awareness of need for change; personalize information about risks and benefits
Contemplation	Intends to take action in the next six months	Motivate; encourage making specific plans
Preparation	Intends to take action within the next thirty days and has taken some behavioral steps in this direction	Assist with developing and implementing concrete action plans; help set gradual goals
Action	Has changed behavior for less than six months	Assist with feedback, problem solving, social support, and reinforcement
Maintenance	Has changed behavior for more than six months	Assist with coping, reminders, finding alternatives, avoiding slips/relapses (as applicable)

Theory of Reasoned Action and Theory of Planned Behavior

Note: Upper blue section shows the Theory of Reasoned Action; the entire figure shows the Theory of Planned Behavior.

Interpersonal Level Theories

- **Social Cognitive Theory (SCT)**
  - describes a dynamic, ongoing process in which personal factors, environmental factors, and human behavior exert influence upon each other.

Table 5. **Social Cognitive Theory**

Concept	Definition	Potential Change Strategies
Reciprocal determinism	The dynamic interaction of the person, behavior, and the environment in which the behavior is performed	Consider multiple ways to promote behavior change, including making adjustments to the environment or influencing personal attitudes
Behavioral capability	Knowledge and skill to perform a given behavior	Promote mastery learning through skills training
Expectations	Anticipated outcomes of a behavior	Model positive outcomes of healthful behavior
Self-efficacy	Confidence in one's ability to take action and overcome barriers	Approach behavior change in small steps to ensure success; be specific about the desired change
Observational learning (modeling)	Behavioral acquisition that occurs by watching the actions and outcomes of others' behavior	Offer credible role models who perform the targeted behavior
Reinforcements	Responses to a person's behavior that increase or decrease the likelihood of reoccurrence	Promote self-initiated rewards and incentives

Community Level Theories

- **Community Organization and Other Participatory Models**
  - emphasize community-driven approaches to assessing and solving health and social problems.

- **Diffusion of Innovations Theory**
  - addresses how new ideas, products, and social practices spread within an organization, community, or society, or from one society to another.

- **Communication Theory**
  - describes how different types of communication affect health behavior.
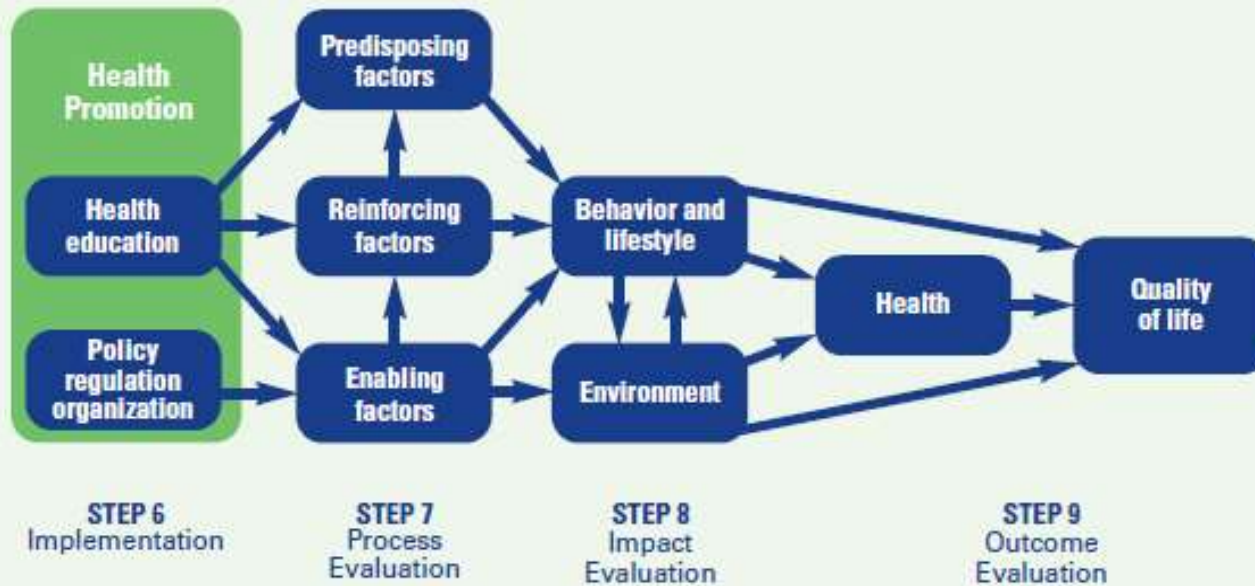
Planning Model

- **PRECEDE-PROCEED Model**
  - developed by Green, Kreuter, and associates.
  - is a planning model, not a theory.
  - does not predict or explain factors linked to the outcomes of interest, but offers a framework for identifying intervention strategies to address these factors.
  - provides a road map for designing health education and health promotion programs.
  - guides planners through a process that starts with desired outcomes and works backwards to identify a mix of strategies for achieving objectives.

PRECEDE-PROCEED Model

Figure 9. The PRECEDE-PROCEED Model

Source: Green LW, Kreuter MW, 1999.

- *Predisposing factors*
  - *motivate or provide a reason for behavior*
  - *include knowledge, attitudes, cultural beliefs, and readiness to change.*

- *Enabling factors*
  - *enable persons to act on their predispositions*
  - *include available resources, supportive policies, assistance, and services.*

- *Reinforcing factors*
  - *come into play after a behavior has been initiated*
  - *encourage repetition or persistence of behaviors by providing continuing rewards or incentives*
  - *Include social support, praise, reassurance, and symptom relief*

Table 10.	Diagnostic Elements of PRECEDE-PROCEED	
Planning Step	**Function**	**Examples of Relevant Theory**
1. Social Assessment	Assesses people's views of their own needs and quality of life	Community organization Community building
2. Epidemiological Assessment	Documents which health problems are most important for which groups in a community	Community-level theories (If the community helps to choose the health problem that will be addressed)
3. Behavioral/ Environmental Assessment	Identifies factors that contribute to the health problem of interest	Interpersonal theories - Social Cognitive Theory Theories of organizational change Community organization Diffusion of innovations
4. Educational/ Ecological Assessment	Identifies preceding and reinforcing factors that must be in place to initiate and sustain change	All three levels of change theories: - Individual - Interpersonal - Community
5. Administrative/ Policy Assessment	Identifies policies, resources, and circumstances in the program's context that may help or hinder implementation	Community-level theories: - Community organization - Organizational change

Using Theory to Plan Multilevel Interventions

Change Strategies	Examples of Strategies	Ecological Level	Useful Theories
Change People's Behavior	• Educational sessions • Interactive kiosks • Print brochures • Social marketing campaigns	Individual	Stages of Change Precaution Adoption Process Health Belief Model Theory of Planned Behavior
	• Mentoring programs • Lay health advising	Interpersonal	Social Cognitive Theory
Change the Environment	• Media advocacy campaigns • Advocating changes to company policy	Community	Communication Theory Diffusion of Innovations Community Organizing