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Epidemiological Assessment

- To determine for a given target population which health problems, measured objectively, pose the greatest threat to health and quality of life.

Epidemiology

- The study of the distribution and determinants of health-related conditions or events in defined populations and the application of this study to control health problems
 - What is the problem?
 - Who has the problem?
 - Why do those with the problem have it?

Reviewing Epidemiological Data

- Functions:
 - To establish the relative importance of various health problems in the target population as a whole and in population subgroups.
 - To provide a basis for setting program priorities among the various health problems and subgroups.
 - To help allocate responsibilities among collaborating professionals, agencies, or departments.

Indicators of Health Status

- Mortality
 - Death
- Morbidity
 - Disease or injury
- Disability
 - Dysfunction

Nonfatal Consequences

- Impairment
 - Any loss or abnormality of structure or function
- Disability
 - An restriction or lack of ability to perform any activity in a manner or range considered normal
- Handicap
 - A disadvantage for a given individual resutling from an impairment or disability that prohibits that individual from fulfilling a role deemed normal

Rates

- Incidence
 - New cases of the disease within a certain period
 - Hard to find for chronic diseases
- Prevalence
 - Total number of continuing or surviving cases or people with the disease at a particular point in time
 - Reflects both incidence and the duration of the disease.

Setting Priorities

- Questions to ask:
 - Which problem has the greatest impact in terms of death, disease, days lost from work, rehabilitation costs, disability, family disorganization, and cost to communities, agencies, for damage repair or loss and cost recovery?
 - Are certain subpopulations at special risk?
 - Which problems are most susceptible to intervention?

Setting Priorities

- Questions to ask:
 - Which problem is not being addressed by other agencies in the community?
 - Which problem, when appropriately addressed, has the greatest potential for an attractive yield—in improved health status, economic savings, or other benefits?
 - Are any of the health problems highly ranked as a regional or national priority?

Program Plans

- Plan should have:
 - Progress in meeting objectives which can be measured
 - Individual objectives based on relevant, reasonably accurate data
 - Objectives that are in harmony across topics as well as across levels

Program Goals

- Are considered to be more general than objectives
- Achievement of each of the more specific and intermediate objectives will contribute to the achievement of the more general goals.

Program Goals Example

- The survival rate of mothers, infants, and children will be raised through the optimal growth and development of children.

Developing Health Objectives

- Objectives should address:
 - Who will receive the program?
 - What health benefit should they receive?
 - How much of that benefit should be achieved?
 - By when should it be achieved, or how long should the program run?

Good Verbs = Good Objectives

Less Precise

- Realize
- Enjoy
- Believe
- Desire
- Experience
- Appreciate

Precise

- Identify
- Illustrate
- Apply
- Develop
- Supports
- Accepts

Health Objectives Example

- The maternal mortality rate within Counties A and B will be reduced by 10% within the first 2 years and an additional 51% the next 3 years with reductions continuing until the state average rate is reached.

Health Objectives Example

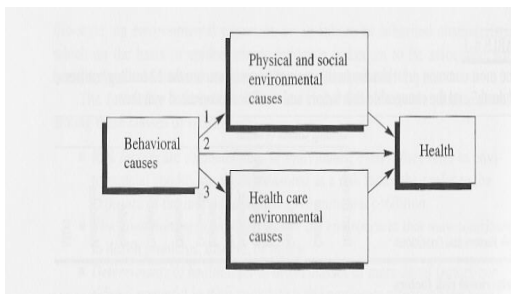
- The infant mortality rate will be reduced to the state average within 10 years. Perinatal mortality rate will be reduced by 94%. Fetal death will be reduced from X to Y% in the same period.

Behavioral and Environmental Assessment

Behavioral and Environmental Assessment

- Looks at the ecological perspective of health.
- Behavioral Assessment
 - A systematic analysis of the behavioral links to the goals or problems identified in the epidemiological and social assessments.
- Environmental Assessment
 - A parallel analysis of factors in the intermediate social and physical environment that could be causally linked to the behavior identified in the behavioral assessment or directly to the outcomes of interest.

Behavioral Influences on Health



Etiology

- Risk factor
 - Characteristics of individuals
- Risk condition
 - Characteristics of the environment that may contribute to health problems, disease or injury
- Determinants of health
 - Broad classes of more distal factors which are powerful contributors in their cumulative and aggregate effects on health of populations

Determinants of Health*

More Distal

- Income & social status
- Gender
- Education
- Employment & working conditions
- Physical environment
- Biology & genetic endowment

More Proximal

- Personal health practices & coping skills
- Healthy child development
- Health & social services
- Culture
- Social support networks
- Social environment

*Tonmyr et al., The population health perspective... *Chronic Diseases in Canada* 23:123-129, Fall 2002.

Behavioral Assessment

- Step 1: Delineating the behavioral and non-behavioral causes of the health problem
- Step 2: Developing a classification of behaviors
- Step 3: Rating behaviors in terms of importance
- Step 4: Rating behaviors' changeability
- Step 5: Choosing behavioral targets

Non-behavioral Factors

- Includes personal factors that are least controllable by individual or collective action but that do contribute to health problems
 - Genetic predisposition, age, gender, congenital disease, physical and mental impairment, places of work and residence
- Must be taken into account in planning in order to avoid victim blaming.

Types of Health-Related Behavior

- | | |
|--|---|
| ▪ Wellness behavior | ▪ Illness behavior |
| ▪ Preventive health behavior <ul style="list-style-type: none">▪ Primary▪ Secondary | ▪ Self-care behavior |
| ▪ At-risk behavior | ▪ Sick-role behavior |
| ▪ Mutual-aid | ▪ Family planning |
| ▪ Parenting | ▪ Social action <ul style="list-style-type: none">▪ Assessing needs▪ Planning, evaluation▪ Political action |

Step 2: Developing a classification of behaviors

- Divide list of behavioral factors into:
 - Preventive behaviors:
 - Behaviors associated with promoting health, preventing the health problem, or maintaining self-care and controlling the sequelae of the health problem
 - Primary, secondary, and tertiary prevention
 - Treatment procedures:
 - Actions or treatment procedures for the health goal or problem.

Step 3: Rating behaviors in terms of importance

- Importance of behavior is indicated when:
 - It occurs frequently.
 - It is clearly and potently linked to the health problem.
 - There is a strong theoretical link for causal relation to the health problem.
- Also need to consider resources and attributes.

Step 4: Rating behaviors' changeability

- High changeability is probable when behaviors:
 - Are still in the developmental stages
 - Have only recently been established
 - Are not deeply rooted in cultural patterns or lifestyles
 - Have been found to change in previous attempts

Step 5: Choosing Behavioral Targets

		More Important	Less Important
Less Changeable	More Changeable	High priority for program focus Quadrant 1	Low priority except to demonstrate change for political purpose Quadrant 3
	Less Changeable	Priority for innovative program; evaluation crucial Quadrant 2	No program Quadrant 4

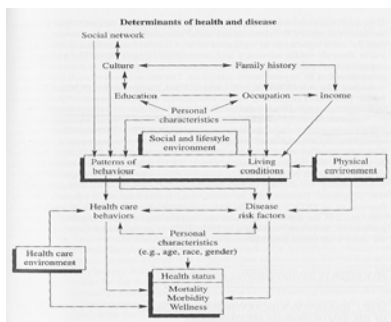
Behavioral Objectives

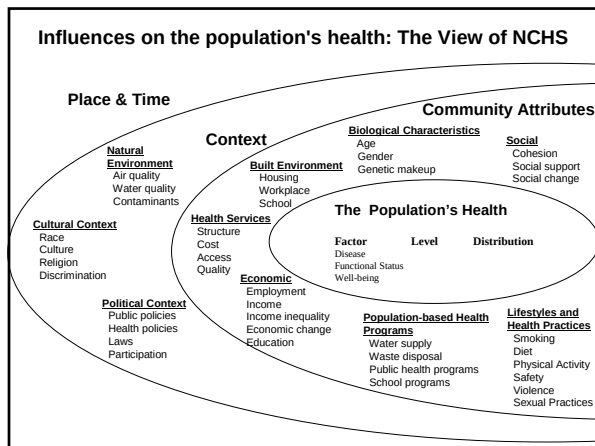
- Must be specific.
- Should answer:
 - Who?
 - What?
 - How much?
 - When?
- Example:
 - District residents age 20-35 will show a 20% reduction in the prevalence of cigarette smoking within two years of program implementation.

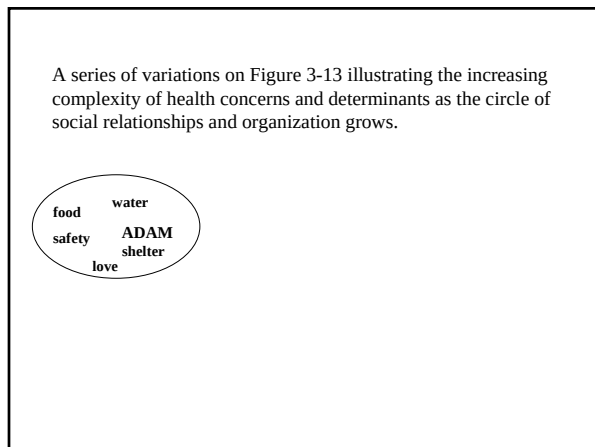
Environmental Assessment

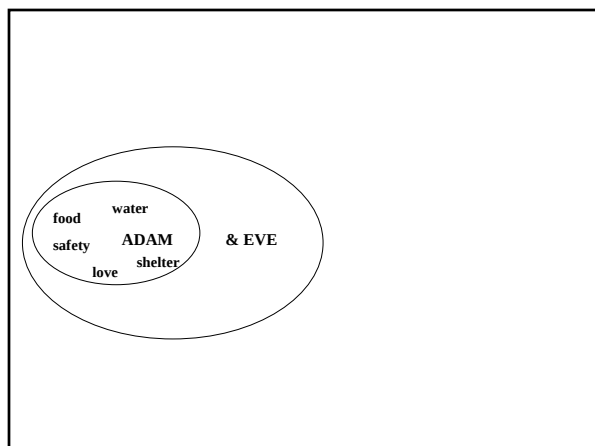
- Focus on environmental aspects that are:
 - More social than physical
 - Interactive with behavior in their impact on health
 - Changeable by social action and health policy.
- Environment components:
 - Social
 - Physical
 - Health care

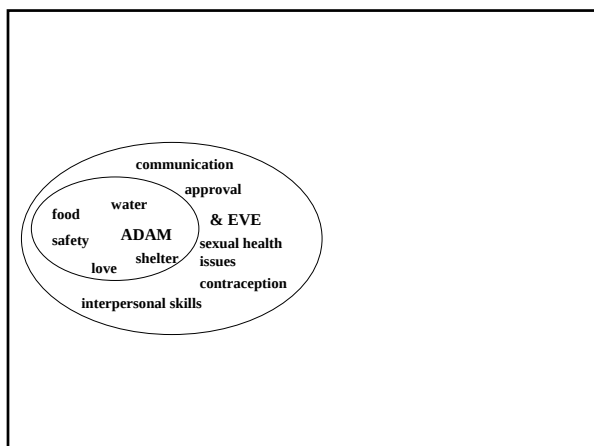
Environmental Influences on Health

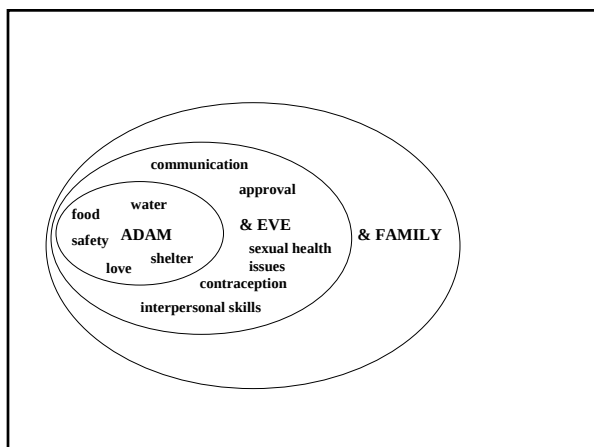


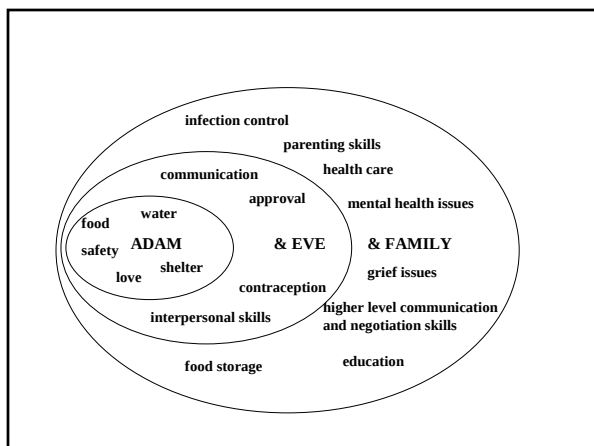


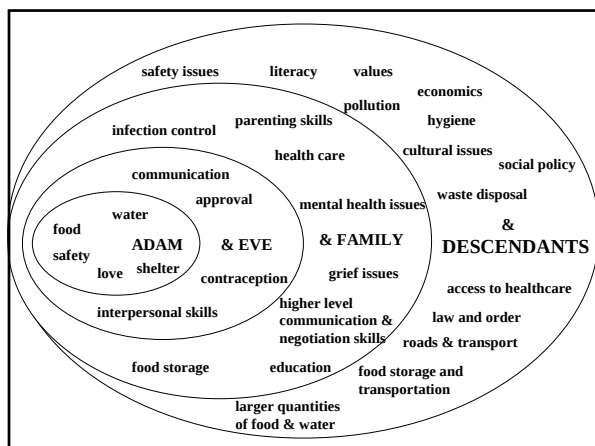












Environmental Assessment

- Step 1: Identifying which environmental causes of the health problem are changeable
- Step 2: Rating environmental factors on relative importance
- Step 3: Rating environmental factors on changeability
- Step 4: Choosing the environmental targets

Environmental Determinants

- Poor housing
- Poor food supply
- High prices on low-fat foods
- Limited open spaces for exercise
- Restaurants using saturated fats
- Smoking in workplaces, public places
- High-stress jobs with little discretion

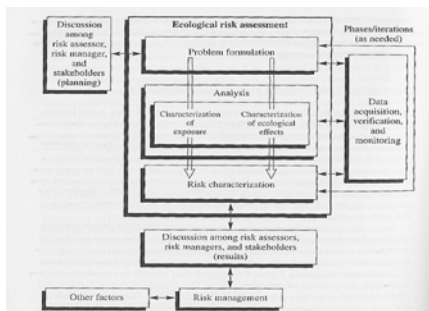
Step 2: Rating Environmental Factors on Relative Importance

- Criteria for rating environmental factors:
 - Strength of the relationship of the environmental factor to the health or quality of life goal or problem
 - Incidence, prevalence, or number of people affected by the environmental factor

Step 3: Rating Environmental Factors on Changeability

- Should involve dialogue between risk assessors, risk managers, and stakeholders
- Changeability relates to political will and costs associated with change.

Step 3: Rating Environmental Factors on Changeability



Step 4: Choosing Environmental Targets

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Stating Environmental Objectives

- Includes:
 - What?
 - How much?
 - When?
- If actions of specific people are needed, behavioral objectives might be set for those people.

What Are Objectives?

- More precise than goals
- Small steps that if completed will achieve the program goal
 - They define success
- Convert assessment data/community problems into program direction
- Blueprint for program replication

Criteria for Developing Objectives

- Can the objective be realized during the life of a program?
- Does your organization have enough resources to achieve the objective?
- Are the objectives consistent with the organization's mission?

Criteria for Developing Objectives

- Do the objectives violate the rights of those involved?
- Are the objectives culturally appropriate to the target population?

Elements of Effective Objectives

- **S**pecific
 - Does the objective clearly specify what will be accomplished and by how much?
- **M**easurable
 - Is the objective measurable?
- **A**ppropriate
 - Does the objective make sense in terms of what the program is trying to do?

Elements of Effective Objectives

- **R**ealistic
 - Given the resources and experience, is the objective achievable?
- **T**ime-based
 - By when will the objective be achieved?
- Is the objective **SMART**?

Good Verbs = Good Objectives

- | <u>Less Precise</u> | <u>Precise</u> |
|---------------------|----------------|
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Formula for Creating an Objective

By _____ + _____ + _____ + _____
 time *condition* *population* *verb*

By December 30, 2003, 80% of the youth in Whole County will report not using drugs or alcohol before engaging in sexual intercourse.

Examples:
The goal of the name of program
is:

- To reduce the incidence of HIV among MSM (aged 25-44 years) living in my city.
- To reduce HIV transmission through needle-sharing among IDUs in my county.
- To reduce the number of HIV infections among teenagers (aged 15-19 years) in my school district.
- To raise the survival rate of African American women living with HIV in my metropolitan area.

Examples:
Health Objectives:

- By December 31, 2006, there will be a 10% reduction in the number of new HIV infections reported among MSM (aged 25-44 years) living in my city.
- The mortality rate among African American women living with HIV in my metropolitan area will be reduced by 15% within the first two years the name of my program is implemented.
- The incidence rate of HIV among IDUs in my county will be reduced to the state average by the end of the program.

Examples:
Behavioral Objectives:

- By the end of the program, 70% of program participants will report using a condom at last act of sexual intercourse. (B)
- By December 31, 2005, there will be a 10% increase in the number of program participants who returned to the practice of sexual abstinence. (B)

Examples:
Environmental Objectives:

- By the end of the 2005-2006 academic year, there will be a condom vending machine installed in each bathroom of every residence hall on my campus (250 machines). (EN)
- By the end of the first year, 50% of parents/guardians of program participants will attend at least one support group or educational meeting with their child. (EN)
