Community-Based Strategies for Cancer Control

Chanita Hughes Halbert, Ph.D.
Department of Psychiatry and Behavioral Sciences
Hollings Cancer Center
Medical University of South Carolina
1900: Ten Leading Causes of Death per 100,000 persons

- Pneumonia
- Tuberculosis
- Diarrheal Diseases
- Heart Disease
- Stroke
- Nephritis
- Accidents
- Cancer
- Senility
- Diptheria

2007: Ten Leading Causes of Death per 100,000 persons

- Heart Disease
- Cancer
- Stroke
- CLRD
- Accidents
- Alzheimer's Disease
- Diabetes
- Influenza and Pneumonia
- Nephritis
- Septicemia

Adapted from the *MMWR* Vol. 48, no. 29, 1999 *Centers for Disease Control and Prevention* and 2007 data from the National Center for Health Statistics
Public Health Approach to Disease Prevention

- **Primary Prevention**: Actions taken to prevent disease from developing through education and reduced risk exposure (e.g., smoking cessation, increased physical activity)

- **Secondary Prevention**: Actions taken to reduce the onset of clinical disease after exposure and/or detect disease in early stages when treatment is more likely to be successful (e.g., screening)

- **Tertiary Prevention**: Actions taken to treat disease or prevent complications after the onset of disease

- Prevention efforts can be universal, or developed for the entire population, and targeted, which focus on individuals at higher risk

- These efforts can be combined (e.g., high blood pressure screening, HIV prevention)

Khoury et al., Am J Public Health, 1996;86:1717-1722
National agenda that communicates a vision and overarching goals, supported by topic areas and specific objectives for improving the population’s health and achieving health equity.


Leading Health Indicators
Healthy People 2020

A society in which all people live long, healthy lives

**Overarching Goals:**
- Attain high quality, longer lives free of preventable disease, disability, injury, and premature death.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Promote quality of life, healthy development and healthy behaviors across all life stages.

**Leading Health Indicators**

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Slade-Sawyer, P, HHS Office of Disease Prevention and Health Promotion
Social Determinants of Health

Socioeconomic & political context

- Governance
- Policy (Macroeconomic, Social, Health)
- Cultural and societal norms and values

Social position

- Education
- Occupation
- Income
- Gender
- Ethnicity/Race

Material circumstances

- Social cohesion
- Psychosocial factors
- Behaviors
- Biological factors

Health Care System

Distribution of health and well-being

SOCIAL DETERMINANTS OF HEALTH AND HEALTH INEQUITIES

Source: Amended from Solar & Irwin, 2007
Impacts of Various Domains on Early Deaths in the United States

- Genetic Predisposition (30%)
- Social Circumstances (15%)
- Environmental Exposure (5%)
- Shortfalls in Medical Care (10%)
- Behavioral Patterns (40%)

Adapted from McGinnis JM, Williams-Russo P, Knichman JR. The case for more active policy attention to health promotion. Health Aff (Millwood) 2002;21(2):78-93.
Health Disparities

Differences in the incidence, prevalence, mortality, and burden of cancer that exist among specific population groups in the US

Differences in the quality of health care that are not due to access-related factors or clinical needs, preferences and appropriateness of intervention
No usual source of care, 45–64 yrs, 2004–2005

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, Health, United States, 2007, Figure 26. Data from the National Health Interview Survey.
Communities Can Be Defined in Multiple Ways

- Geographic (e.g. residents of urban or rural zip codes)
- Life stages (e.g. infants or the elderly)
- Gender
- Race or ethnicity
- Socioeconomic (e.g. Medicaid recipients or privately insured)
- Chronic conditions (e.g. diabetics or physically disabled)
- Immigration status
- Employment (e.g. seasonal migrant workers or shipyard workers)
Community Health Assessment Process

- Produces information about health status and needs of a community via an ongoing, systematic process of:
  - Data collection
  - Data analysis
  - Interpretation of results
  - Distribution of findings
Community Health Assessment Purpose

• Purpose:

 1. Help inform stakeholders in community health for decision-making:
     • Planning/implementing interventions
     • Setting priorities
     • Coordinating and allocating resources

 2. Document need for resources and bolster community commitment and political will to intervene
Community Health Assessment Issues

- Data reliability
  - Reporting errors by patients
  - Limited representation
  - Reporting errors in health care systems

- Selecting the appropriate indicators
  - Reliable
  - Available
  - Generalizable

- Interpretation of health indicators
Community Health Assessment
Interpreting Indicators

- Compare rates from similar localities or regions, state and national rates
- Compare benchmark rates: best rate(s) among local subpopulation(s) may be used as benchmark, or may use HP 2020 targets
- Consider the demographic and socioeconomic comparability of the populations from which the comparison rates are derived
- Examine both recent data and trend data
- Examine rates for subpopulations or for smaller areas to reveal local issues that may be masked at larger scales
Community Health Assessment
Selected Criteria for Prioritizing Public Health Issues

- Absolute prevalence or incidence
- Comparative prevalence or incidence
- Severity
  - Leading causes of morbidity, mortality, YPLL, disability years, etc.
- Disparities among groups
- Increasing trends
- Existence of evidence-based intervention or prevention
- Gaps in capacity to provide intervention or prevention
- Political will in community
Community-Based Participatory Research (CBPR)

- Community-based participatory research (in health) is a collaborative approach to research that equitably involves all partners in the research process and recognizes the unique strengths that each brings.

- CBPR begins with a research topic of importance to the community with the aim of combining knowledge and action for social change to improve community (health).

Primary Goals of CBPR

• Enhance the value and applicability of research to all potential users through shared learning, decision-making, and ownership of research activities and products

• Increase the community’s ability to address its own problems and is intended to leave something positive

Who should participate?

- Often assumed to be the lay community, where the community is defined by a physical space (e.g., neighborhoods)

- However, participants can also be public health practitioners and agencies, as well as their constituents and clients

How much community participation?

- **Minimum**—stakeholders involved at the beginning (formulating research questions) and end (interpreting and applying the findings)

- **Maximum**—stakeholders involved as active partners throughout the research process

- Right level of participation depends on the type of research, etc.

Steps in the CBPR Process

1. Identify community and partners (by set criteria)

2. Identify the research question and health priorities (prioritize and develop consensus)

3. Write the grant application (may or may not be a required step)

4. Collaborative implementation of the project

5. Analysis and interpretation of results and manuscript preparation (with partners as co-authors)

6. Dissemination and application of findings
Community-Based Participatory Research to Address Disparities

MUSC

Triumphant Living Collaborative

HPC

NBLIC

Penn

Community Concerns & Priorities
Comparative Effectiveness Research
Dissemination & Implementation Research
Triumphant Living Collaborative

- Develop infrastructure for community and academic researchers to undertake joint intervention research to address disparities in cancer and cardiovascular disease in African Americans
- To identify and prioritize health concerns
- To develop, implement, and evaluate interventions to address community health priorities and concerns
- To develop resources to facilitate academic and community partnerships in West Philadelphia
- To develop and implement strategies for disseminating the results of the interventions to academic and community stakeholders
Overview of Consortium Activities

- **Phase 1 (2005-2008)**
  - Identify community health priorities
  - Develop pilot interventions

- **Phase 2 (2008-2013)**
  - Randomized trial of risk education
  - Community-based navigation for cancer control
  - Dissemination of prevention information

- **Phase 3 (2013-present)**
  - Dissemination of research results and implementation in community-based organizations
Community Health Priorities

Number of Responses

- Environment: 6
- Violence: 11
- High blood pressure: 12
- Diabetes: 14
- Access to care: 16
- Mental health: 15
- Cancer: 16
- Substance abuse: 16
- Obesity: 26
- STD: 29
COMPONENTS OF INTEGRATED RISK EDUCATION

Construct | Strategy
--- | ---
Perceived Severity | Information about cancer and cardiovascular disease
Perceived Risk | Identify overlapping risk factors for disease
Self-efficacy | Values clarification from motivational interviewing & provide information about behavioral change
Cue to Action | Participants develop individualized action plan
INTERVENTION COMPONENTS

- Delivered in a group setting by a health educator
- Incorporated multiple modes of presenting information (e.g., video, slide presentation, written materials)
- About 2-3 hours in length
- Developed intervention to be a brief, but intensive program that could be disseminated to other settings
TRIUMPHANT LIVING COLLABORATIVE PHASE II

- **Population**: African American adults, community residents in the Philadelphia, PA metropolitan area

- **Recruitment**: Mass media, community outreach, referral from program participants

- **Interventions**: Integrated versus disease-specific risk education
COMPARATIVE EFFECTIVENESS TRIAL

DISEASE SPECIFIC RISK COUNSELING GROUP

Risk Factors

CVD = Fruit/Vegetable Intake and Physical Activity

INTEGRATED RISK COUNSELING GROUP

Risk Factors

CVD + Cancer = Fruit/Vegetable Intake and Physical Activity
COMPARATIVE EFFECTIVENESS TRIAL

• **Session 1: Risk Factors**
  – Disease facts and figures for African Americans

• **Session 2: Dietary Behaviors**
  – Recommendations for fruit and vegetable intake
  – Menu planning
  – Food diary
  – Label reading

• **Session 3: Physical Activity**
  – Recommendations for physical activity
  – Starting a walking program
  – Making active choices
  – Exercising in short bouts

• **Session 4: Putting it Together**
  – Anticipated barriers and facilitators to behavior change
  – Problem solving training
## SAMPLE CHARACTERISTICS (n=530)

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<th>Variable</th>
<th>Level</th>
<th>n  (%)</th>
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<td>Gender</td>
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<td>227 (43%)</td>
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<td>Female</td>
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<td>Marital status</td>
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<td>≤ High school</td>
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<td>Age</td>
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<td>Body mass index</td>
<td>Mean (SD)</td>
<td>29.9 (6.6)</td>
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Collective Efficacy and Obesity-Related Health Behaviors in a Community Sample of African Americans

Chanita Hughes Halbert · Scarlett Bellamy · Vanessa Briggs · Marjorie Bowman · Ernestine Delmoor · Shiriki Kumanyika · Rodney Rogers · Joseph Purnell · Benita Weathers · Jerry C. Johnson

| Vegetable intake         | None/don’t know | ½ Cup or less | ½–1 Cup   | 1–2 Cups | 2–3 Cups | 3–4 Cups | 4+ Cups |  |
|--------------------------|-----------------|---------------|------------|----------|----------|----------|---------|
|                          | 30 (9 %)        | 26 (8 %)      | 60 (18 %)  | 99 (29 %)| 64 (19 %)| 33 (9 %) | 26 (8 %)| |

| Fruit intake             | None/don’t know | ½ Cup or less | ½–1 Cup   | 1–2 Cups | 2–3 Cups | 3–4 Cups | 4+ Cups |  |
|--------------------------|-----------------|---------------|------------|----------|----------|----------|---------|
|                          | 45 (13 %)       | 37 (11 %)     | 57 (17 %)  | 74 (22 %)| 60 (18 %)| 34 (10 %)| 31 (9 %)| |

| Physical activity        | Inactive        | Low           | Medium     | High      |  |
|--------------------------|-----------------|---------------|------------|-----------|
|                          | 61 (18 %)       | 111 (33 %)    | 81 (24 %)  | 85 (25 %) |
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Table 4 Logistic regression analysis of fruit and vegetable intake

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<thead>
<tr>
<th>Variable</th>
<th>Level</th>
<th>OR</th>
<th>95 % CI</th>
<th>p value</th>
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<td>Fruit intake</td>
<td></td>
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<td>Employment status</td>
<td>Employed</td>
<td>1.39</td>
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<td>1.59</td>
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<td>&gt;1 year</td>
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<tr>
<td>Collective efficacy</td>
<td>(continuous)</td>
<td>1.56</td>
<td>1.18, 2.07</td>
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<td>0.73, 1.26</td>
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<td>1.19, 2.04</td>
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<td>Vegetable intake</td>
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<tr>
<td>Age</td>
<td>(continuous)</td>
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<td>0.91, 1.54</td>
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<td>Community organization</td>
<td>One or more</td>
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<td>0.82, 2.37</td>
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<td>None</td>
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<tr>
<td>Collective efficacy</td>
<td>(continuous)</td>
<td>1.25</td>
<td>0.94, 1.65</td>
<td>0.12</td>
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<tr>
<td>Neighborhood satisfaction</td>
<td>(continuous)</td>
<td>0.92</td>
<td>0.70, 1.21</td>
<td>0.54</td>
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<tr>
<td>Dietary self-efficacy</td>
<td>(continuous)</td>
<td>1.96</td>
<td>1.46, 2.63</td>
<td>0.0001</td>
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<td>Physical activity self-</td>
<td>(continuous)</td>
<td>1.26</td>
<td>0.98, 1.61</td>
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<tr>
<td>efficacy</td>
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\( ^a \) OR for continuous variables represent 1 SD unit change
CHANGES IN PHYSICAL ACTIVITY (n=523)

Baseline

Adherent: 47.3%
Not Adherent: 52.7%

1-Month

Adherent: 52.2%
Not Adherent: 47.7%

McNemar = 8.04, p = 0.005
CHANGES IN PHYSICAL ACTIVITY BY STUDY GROUP
DISEASE SPECIFIC (n=261)

McNemar = 2.27, p = 0.13
CHANGES IN PHYSICAL ACTIVITY BY STUDY GROUP
INTEGRATED RISK (n=262)

Percent

Baseline 1-Month

Adherent Not Adherent

46.2 53.8
52.3 47.7

McNemar=6.40, p=0.01
CHANGES IN PHYSICAL ACTIVITY BY STUDY GROUP
INTEGRATED COMPLETE CASE ANALYSIS (N=106)

Baseline: 43.4% Adherent, 56.6% Not Adherent
1-Month: 58.5% Adherent, 41.5% Not Adherent

McNemar = 7.11, p = 0.008
ADOPTION OF EVIDENCE-BASED STRATEGIES (n=241)

- Exercise in short bouts: 60% Yes
- Talked to HCP about concerns: 65% Yes
- Made active choices: 69% Yes
- Started walking program: 71% Yes
• Health care providers are important for promoting lifestyle behavior change among patients

• There are many barriers to provider counseling about lifestyle changes and patient acceptance of these recommendations

• Efforts are needed to increase the translation of evidence-based strategies for lifestyle modification and health behavior change counseling into primary care
SPECIFIC AIMS

• Identify and synthesize evidence-based strategies for lifestyle modification and health behavior counseling among racial and ethnic minorities

• Identify and prioritize concerns and preferences about the delivery and use of lifestyle modification and health behavior counseling among health care providers and patients

• Develop implementation and evaluation plans that specify the procedures for delivering evidence-based strategies in primary care

• Evaluate the process of engaging provider and patient stakeholders in efforts to reduce disparities in quality and access to lifestyle modification and health behavior change counseling
Conceptual Model and Study Procedures

Phase I
Priority and Preference Identification

Evidence Synthesis Review
Clin, Soc, & Epidemiol Assessment
Behav, Environ, & Ecological Assessment

Phase II
Dissemin & Translation

Evidence Dissemination
Implement & Eval Plan Develop
Implement & Eval Plan Dissemin

Data Integration

Abbreviations: Clin=Clinical; Soc=Social; Epidemiol=Epidemiological; Behav=Behavioral; Environ=Environmental; Eval=Evaluation; Dissemin=Dissemination; Implement=Implementation
Phase I Methods

- Evidence synthesis review
- Focus groups with patients
- Key informant interviews with health care providers
- Lifestyle and health behavior survey with patients
Phase II Methods

• Evidence dissemination
  – Academic detailing with practices

• Develop implementation plans

• Develop evaluation plans

• Dissemination of implementation and evaluation plans

• Impact evaluation
Conclusions

• Community members and health care providers can work together to address lifestyle health behaviors

• It is important to disseminate and implement interventions into community and clinical settings

• Scaling up evidence-based interventions to different geographic regions is needed