




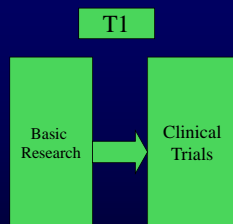
## Translating Evidence into Practice, Lessons from Global Health, and the Long Haul



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December 3, 2009

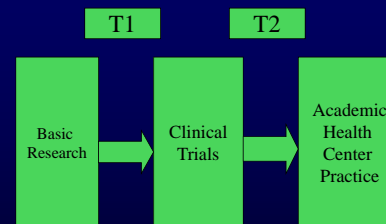


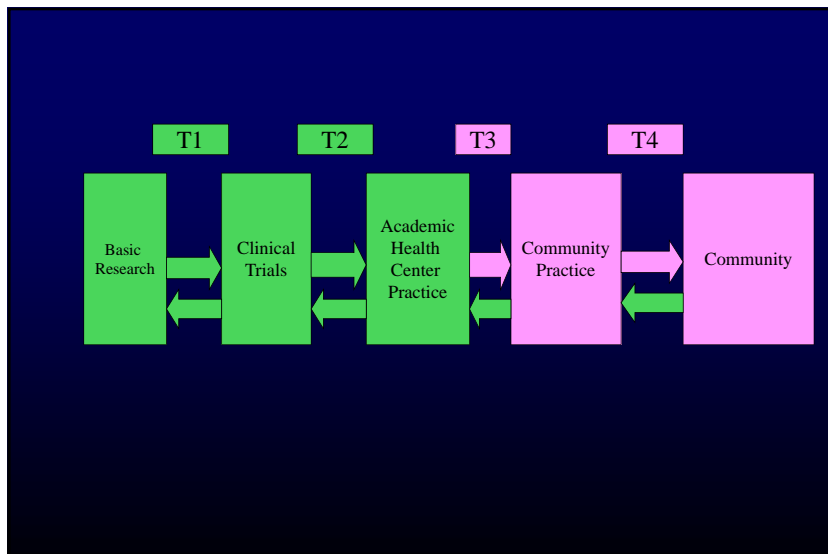
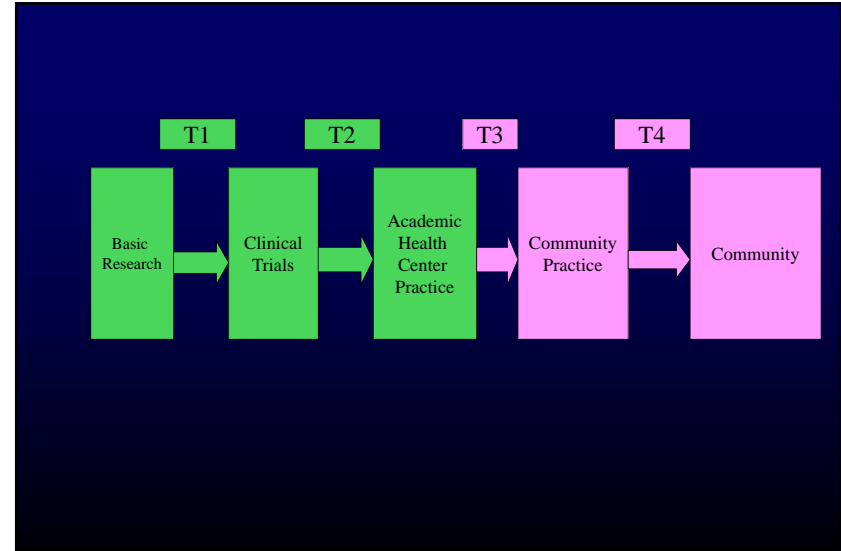
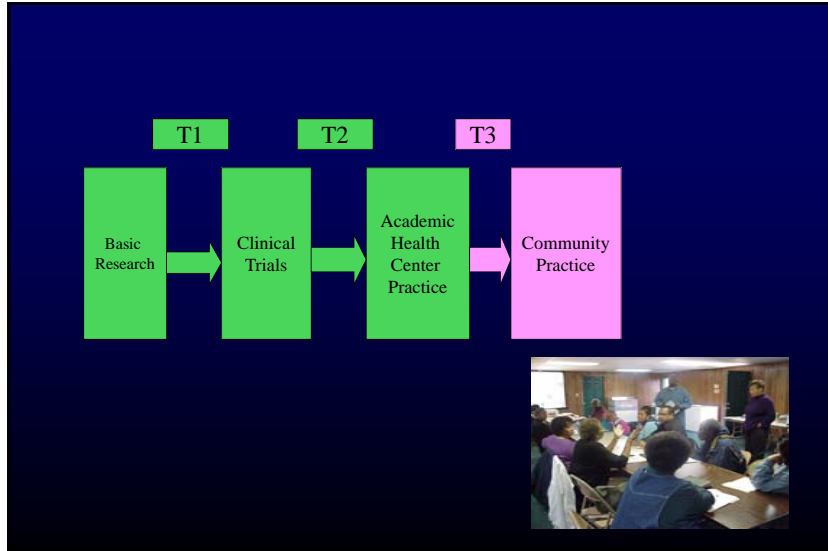
- **Translating evidence into practice**
  - T2, T3, T4
  - Dissemination
  - Swimming upstream
- **Lessons from global health**
  - Even in developed countries, culture matters
  - Denmark's food taxes
  - Japan – nutrition transition, 'metabo'
- **The long haul → sustainability**
  - Our dependence on funding
  - Sticking to a line of study/practice
  - Ideas for going forward



"Research is good, but what do you do with the research after you get it?"

Ella Heard Trammell  
Chair, Morehouse School of Medicine  
Prevention Research Center Community Coalition Board





## Advantages of Evidence-Based Strategies and Programs

- Effective in the study populations
- Cost effective
- Shorten the time it takes to develop a program
- Reduce the time it takes to research a community & successfully implement the program



## Evidence-Based Resources For Public Health Practice

- Research Tested Intervention Programs (RTIPS)
- Evidence-Based Guidelines (clinical, community)
- Systematic Reviews
- Best & Model Practices (e.g., SAMSHA)



## Guide To Clinical Preventive Services

- **U.S. Preventive Services Task Force (USPSTF)** recommendations on screening, counseling, and preventive medication topics, including clinical considerations for each topic.
- The U.S. Preventive Services Task Force is an independent panel of experts in primary care and prevention that systematically reviews the evidence of effectiveness and develops recommendations for clinical preventive services.

<http://www.preventiveservices.ahrq.gov/>



**GUIDE TO COMMUNITY Preventive Services** **The Community Guide** **CDC**

Evidence-based recommendations for programs and policies to promote population health.

Search The Community Guide

**Topics**

|                                   |                           |                                 |                                    |
|-----------------------------------|---------------------------|---------------------------------|------------------------------------|
| <a href="#">Alcohol</a>           | <a href="#">Cancer</a>    | <a href="#">Diabetes</a>        | <a href="#">Mental Health</a>      |
| <a href="#">Motor Vehicle</a>     | <a href="#">Nutrition</a> | <a href="#">Obesity</a>         | <a href="#">Oral Health</a>        |
| <a href="#">Physical Activity</a> | <a href="#">Pregnancy</a> | <a href="#">Sexual Behavior</a> | <a href="#">Social Environment</a> |
| <a href="#">Substance Abuse</a>   | <a href="#">Tobacco</a>   | <a href="#">Vaccines</a>        | <a href="#">Violence</a>           |
| <a href="#">Worksite</a>          |                           |                                 |                                    |

**Users**

|  |   |
|--|---|
| <b>Public Health Professionals</b><br>What works to promote health and what still needs more research    | <b>Providers of Health Care Services</b><br>Increase delivery of effective preventive services              |
| <b>Legislators and Policy Makers</b><br>Unbiased, evidence-based findings about legal and policy options | <b>Researchers</b><br>What needs more research and ways to improve the quality of the research.             |
| <b>Community-based Organizations</b><br>Improve the health of your community.                            | <b>Employers and Other Purchasers of Health Care Services</b><br>How to enhance employee health efficiently |

**News**

[15% discount](#)  
The Guide to Community Preventive Services in book form

[America's Health: State Rankings — 2005 Edition](#)

**What is It?**

[About the Guide](#)  
[The Book](#)  
[Economics](#)  
[Methods](#)  
[Partners](#)

**Calendar of Events**

[Next Task Force Meeting](#)  
October 18 – 19, 2006

**Contact Info**


[Community Guide Branch](#)  
National Center for Health Marketing (NCHM)  
Centers for Disease Control and Prevention  
1600 Clifton Road NE

**Guide to Community Preventive Services**  
<http://www.thecommunityguide.org>

## Guide To Community Preventive Services A Tool for Getting the Most from Investments in Prevention

- Summarizes what is known about the effectiveness, economic efficiency, and feasibility of interventions to promote community health and prevent disease.
- Makes recommendations for the use of various interventions based on the evidence gathered in scientific reviews.

<http://www.thecommunityguide.org/>




## Systematic Reviews

Systematic process to specify questions, find relevant literature, assess study quality, synthesize results

- Limit bias
- Identify gaps in knowledge
- Distill & summarize large bodies of evidence
- Make assumptions explicit
- Provide information on whether interventions are generally effective or whether they vary based on population, setting, or treatment variation

## Even for effectiveness, the RCT is not always the “gold standard”



Parachutes reduce the risk of injury after gravitational challenge, but their effectiveness has not been proved with randomised controlled trials.

- If the bar is set too high, it can deter innovation & improvement
- Often not appropriate or feasible
- Helpful but not essential
- Can have threats to internal/external validity



## What Works: Community Interventions

- Community water fluoridation
- School-based dental sealant delivery programs
- Early childhood development programs
- Mass media campaigns to reduce tobacco use
- Tobacco cessation telephone support systems

## What Works: Health System Interventions

- Diabetes disease management and case management programs
- Tobacco cessation provider reminders + provider education
- Reduce patients' out-of-pocket costs for vaccinations
- Client and provider reminder systems for vaccinations
- Standing orders for vaccinations

## What Works: Legislation/Regulation/Enforcement

- Sobriety checkpoints
- Reduce legal blood alcohol levels (BAC) to <0.08%
- Maintain legal drinking age at 21 years
- Child safety seat laws
- Safety belt laws
- Increase the unit price of tobacco products
- Smoking bans and restrictions

❖ A crowd stands on the banks of a raging river

❖ They are frantic – trying to pull out people who are being swept downstream

❖ The rescues seem hopeless

❖ Until – a group (public health workers) traipses upstream to see why people are falling in the river

❖ They identify the problem, devise a solution, and put it into action



*Upstream PH strategies address health problems by addressing social determinants, & via environmental and policy interventions \*\**

**They hold great promise to improve health among disadvantaged groups**

**They can – potentially – provide the greatest benefit to the most people – and may be most sustainable**

\*\*JB McKinlay, 1975  
Ottawa Charter, 1986  
McKinlay & Marceau, 1999, 2000



**Health promotion and public health: instruments of social change**

**Policy, advocacy, & organizational change are central**

**Need to link interventions on social & behavioral determinants of health to multiple levels of influence: individual, interpersonal, institutional, community, and policy levels**

*Smedley and Syme, 2000*



**You cannot hope to build a better world without improving the individuals. To that end each of us must work for his [or her] own improvement, and at the same time share a general responsibility for all humanity, our particular duty being to aid those to whom we think we can be most useful.**

**- Marie Curie**



## Some Examples

### Major Public Health Success

Emerging challenges & health inequities now facing public health



## Progress in Tobacco Control

- Reduction in smoking since 1960's – 1 of the 10 top public health achievements of 20<sup>th</sup> century
- Smoking prevalence among adults: 42.4% → 20.9% (1965-2005)
- Estimated > 33 million person-years of life saved



MMWR, 2006

## Public Education Cessation – counseling, pharmacologic

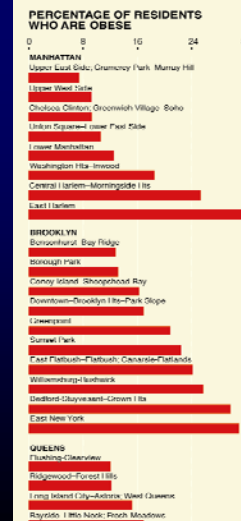
- \* Advocacy
- \* Lawsuits
- \* Legislation
- \* Policies

\* *Upstream strategies*

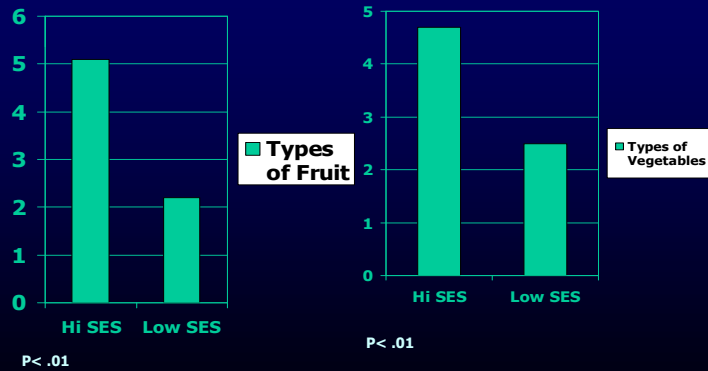


## Emerging Challenges for Health Policy & Social Change

### Income and Obesity in NYC Neighborhoods (2003)



## High- vs. Low-Income Neighborhoods: Availability of Fruits & Vegetables



P < .01  
Glanz, Sallis et al. NEMS-S, AJPM 2007

## Lessons from Global Health

- Environment matters
- Cultural & political norms matter – also in developed countries
  - Food taxes (Denmark)
  - Nutrition transition (Okinawa)
  - “Metabo” prevention (Japan)



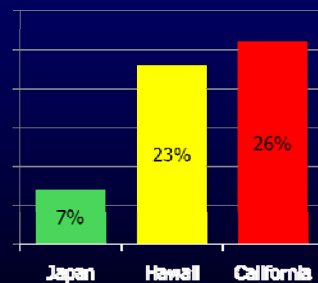
## Environments matter



Incidence of MI/CHD death among Japanese men in Japan – 50% of what it was in Hawaii; and in California 50% greater than Hawaii. Women had similar patterns of breast cancer by migration patterns.

\* Nichaman et al, *Am J Epid* 1975; Robertson et al, *Am J Cardiol* 1977; Ziegler et al, *JNCI* 1993

% Calories from Saturated Fat



Altering sales tax but preserving revenue in Denmark

- Reduce vegetable, fruit, wholegrain tax: 25% → 22%
- Increase tax on butter, cheese, beef, pork, fatty meats: 25% → 31%
- Add sugar tax

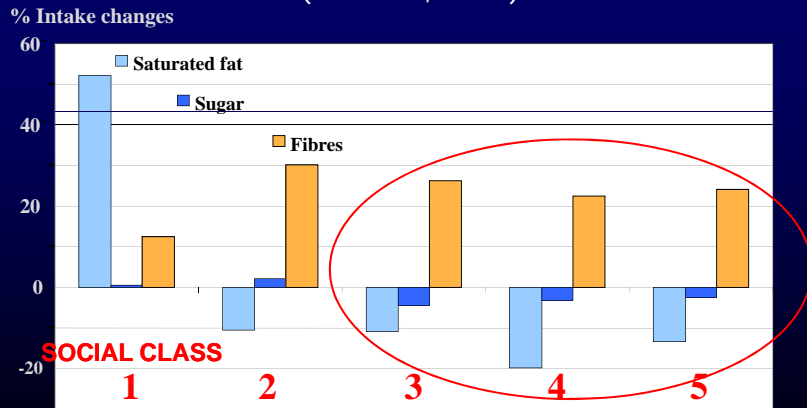


**NB:** income to government unchanged

Smed S & Denver S. Food & Resource Economics Ints. KVL Univ., Denmark, April 2005.



## Manipulating sales taxes can benefit the diet of the poor (classes 3, 4 & 5)



Smed S & Denver S. Food & Resource Economics Inst. KVL Univ., Denmark, April 2005.

## Japan nutrition transition: The Okinawan Paradox



- Traditional active lifestyle, healthy diet, social support → longevity (even in low SES)
- Increasing SES → shorter life expectancy
- Small town – increased diabetes with supermarket shopping and more driving

## The Nutrition Transition: Japan



## Metabo prevention (Japan)

- Average waist sizes in USA: men = 39", women = 36.5"
- Average waist sizes in Japan: men = 32.8", women = 28"
- new limit for Japanese men = 33.5", for women = 35.4"



## Metabo prevention: Japan

*"A recently-introduced law in Japan requires all businesses to have mandatory obesity checks for all their employees and employees' family members over the age of 40. If the employee or family member is deemed obese, and does not lose the extra fat soon, their employer faces large fines. The legislated upper limit for the waistline is 33.5" for men, and 35.5" for women."*

*- June 2008*



Poster at a public health clinic says "goodbye, metabo"!

## SUSTAINABLE PUBLIC HEALTH... in it for the long haul

*How do we measure up in public health?*

- Practice
- Research



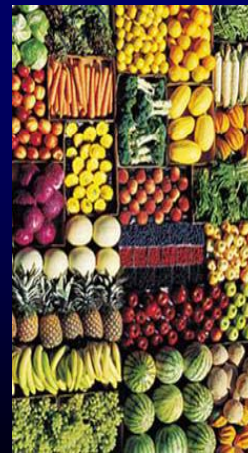
Often we are dependent on funding, for both practice and research

Applied/population scientists have fewer long-duration studies and lines of inquiry than basic scientists



## Dissemination: Why and What We Need

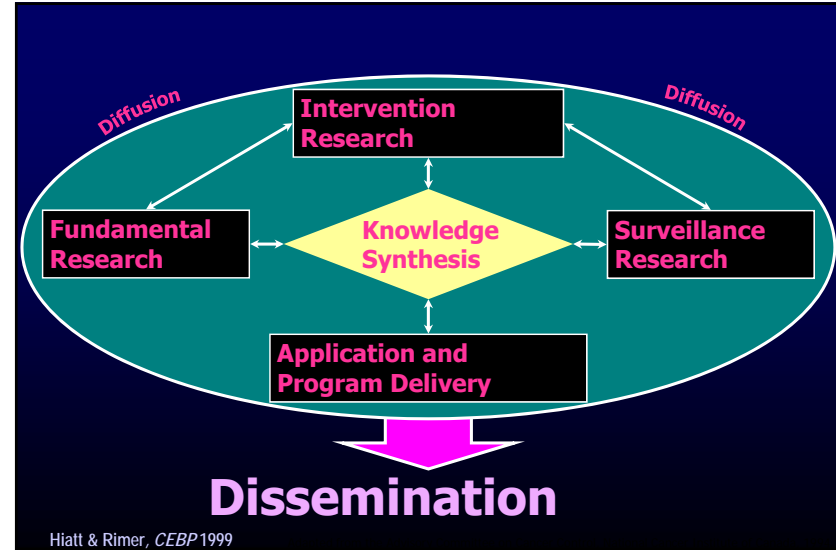
- **Effective public health programs will have little impact if they are not used beyond testing in a controlled trial or local use**
- **To improve health, EBP's must be disseminated**



## Dissemination

Active process through which target groups are made aware of, receive, accept and use information and other interventions

... it doesn't usually go  
In a straight line



## Disseminating EBP to States & Communities

- Evidence is important, but not sufficient
- EBP influences some changes and new programs based on systematic reviews (e.g., *Community Guide*)
- Need for practical tools & steps

Briss, Brownson, Fielding & Zaza (2004)



## Strategies With Staying Power



### Kruisin' Against Tobacco Sales

Reducing sales to minors (Hawaii, 1995-present)



#### KATS Goals:

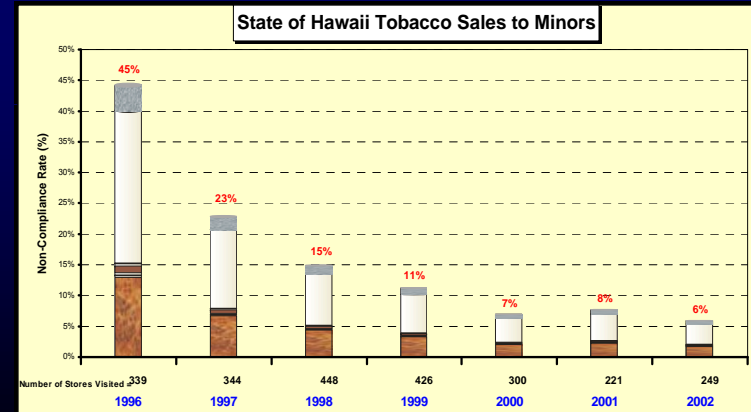
- reduce noncompliance rate for sale of tobacco to minors
- reduce availability of tobacco products to minors

## Methods

Annual random inspections  
Stings and enforcement  
Youth inspectors, undercover police  
Media reports of violators  
Merchant education



## Results: Annual Inspection Trends



Glanz et al., *Prev Med* 2006

## History of Pool Cool Research

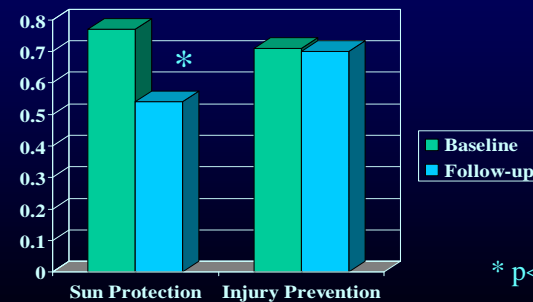
- Educational and environmental sun safety intervention designed for outdoor pools
- Efficacy trial, funded by CDC (1998-2000): developed, pilot tested, and evaluated intervention at 28 pools in Hawaii and Massachusetts
- Results showed significant positive effects on:
  - Sun Protection Behaviors
  - Sun Safe Environments
  - Sunburn Reduction Among Lifeguards/Aquatics Instructors



## Number of Sunburns - Children

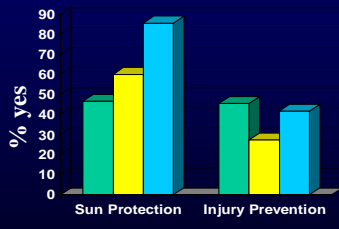
### Pool Cool improved:

child sun protection habits - sunscreen use - shade seeking  
sun protection policies & supports - and reduced child sunburns

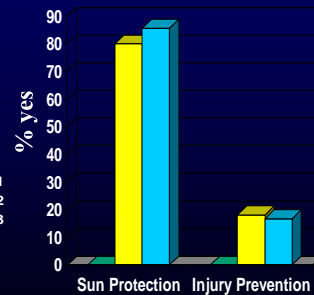


## Environmental Changes: Observation Data

Was sunscreen available  
at the pool ?



Were sun safety signs displayed?



\*  $p < .05$ , \*\*  $p < .005$



## History Continued...

- Pilot Study of Dissemination (2000-2002)
  - Found to be feasible and acceptable in diverse settings
- Diffusion Trial (2003-2008)
  - Evaluated the effects of 2 strategies for program diffusion
  - Study included dissemination to 400+ pools



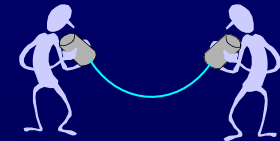
## NEMS is/are research-tested measurement tools (NEMS-S and NEMS-R)

### NEMS...

- \* was originally developed for research
- \* can be used for community assessment, advocacy, and intervention

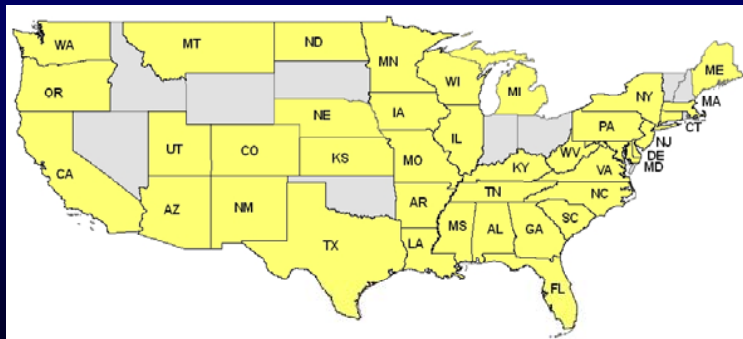


## Dissemination of NEMS Tools & Methods



- ❖ Demand started during development (2004)
- ❖ Initial funding support from RWJF
- ❖ Assumed from the start that many users would customize the tools
- ❖ 2-3 day trainings & train-the-trainer
- ❖ CD-Rom and online tools post-training
- ❖ Partnerships to stretch \$\$\$ - state health departments, universities, CDC, etc.

## States with NEMS Trainers and/or Raters



40 states in the U.S. with over 200 people trained, 3 from Canada, 3 from Singapore, and participants from Netherlands, Brazil, Japan, and China (2005-2009)

## Increasing the odds of sustainability



Ideally, design programs for dissemination



Or later, package interventions into toolkits and protocols that can be replicated and disseminated.



*Give it away!*



**Make it easy and results-oriented**  
**Use all available media technologies to increase reach and tailor to users**



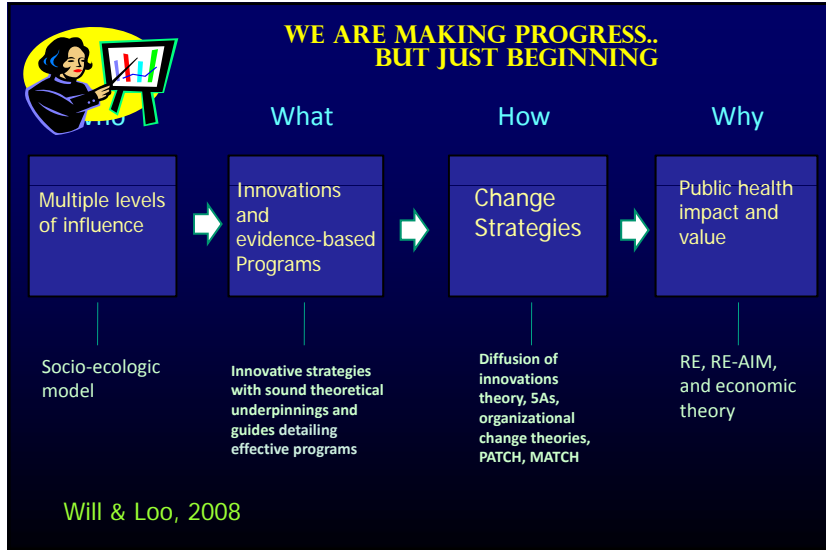
**Evaluate process and outcomes**



## Roads to Sustainability



- Pay attention to population differences
- Researchers should be encouraged, supported, & rewarded for developing real relationships to the populations they study
- Routinely apply principles of developing good interventions
  - Start where the people are
  - Stepwise design of interventions
  - Pre-test, pilot test, and get feedback



**...Science and technology are powerful tools, but we must decide how best to use them.**

**Perhaps the most important point is to ensure that science never becomes divorced from the basic human feeling of empathy with our fellow beings.**

**Dalai Lama\*\***  
*The Universe in a Single Atom: The Convergence of Science and Spirituality (2006)*

**\*\* Presidential Distinguished Professor, Emory University, Oct 2007**

**Acknowledgments**

Diana Chan  
 Neville Owen  
 Amos Jarrette  
 Tom Elliott  
 Barbara Rimer

Many research colleagues  
 Research staff who let me navigate, and who steer the canoe for the journey – even in rough waters  
 Funders - who entrust us with \$\$\$ to try and make a difference



