


# Dissemination and Implementation Evaluation Research

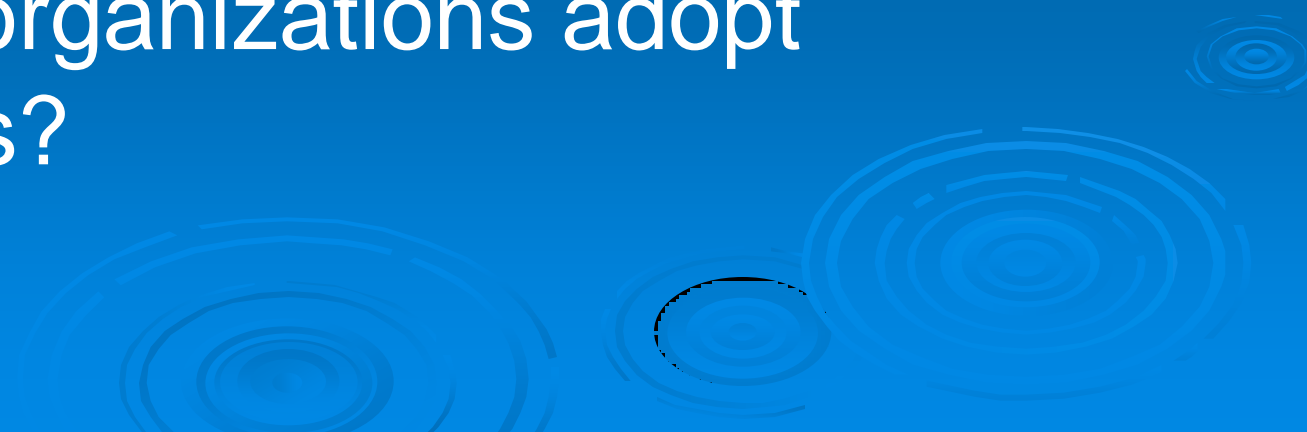
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Centers for Disease Control & Prevention  
National Center for Injury Prevention & Control


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AEA/CDC Evaluation Institute



# Overview

- Knowledge– Practice gap – how can research help clarify and close the gap?
  - Dissemination of what works – best practices
  - Why do organizations adopt programs?
- 

# Overview (cont.)

- What are the issues associated with implementing programs (adaptation and fidelity)?
  - How can CDC's Interactive Systems Framework tie these concepts together?
  - Research examples
  - Applying these questions and concepts to real-world examples.
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# It's a Simple Question -

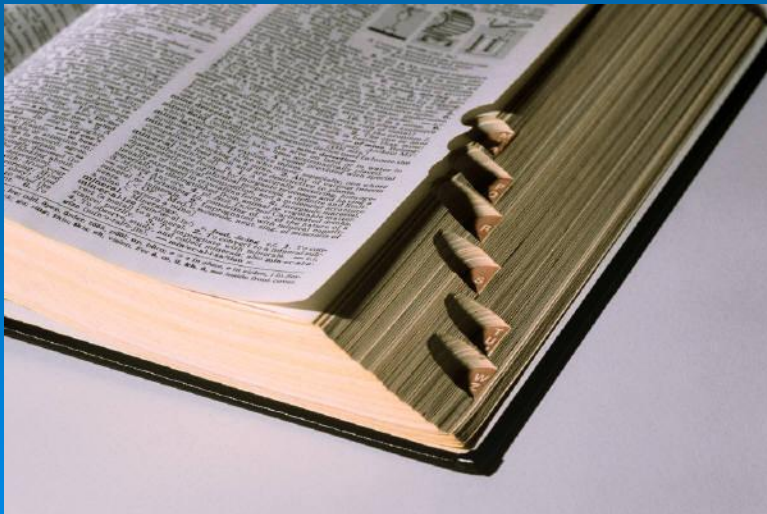
What are the best modalities for disseminating what kinds of information to what kinds of individuals within what types of organizations about what kinds of programs - leading to what decisions about adoption - leading to what dimensions and levels of fidelity and adaptation, as moderated by what kinds of capacity building, technical assistance, training, monitoring, and supervision?



# What's In a Name?

Knowledge to Action  
Research to Practice  
Knowledge Translation  
Knowledge Transfer  
Technology Transfer

Diffusion  
Diffusion of Innovation  
Implementation  
Dissemination and  
Implementation  
Translation  
Science to Service



# Role of Evaluation

Evaluation can be done in order to study the effectiveness of dissemination and implementation efforts

Evaluation can be the innovation/practice we are trying to disseminate and implement



# “Discovery to delivery”

- 17 year delay. A generation
- AHRQ data:
  - \$95 Billion in development, but only 1% to study implementation
- Serum without the syringe?

# 17 years ago??

On the radio:

This Is How We Do It , Montell Jordan



New Lexus Luxury Car

# What stars looked like...



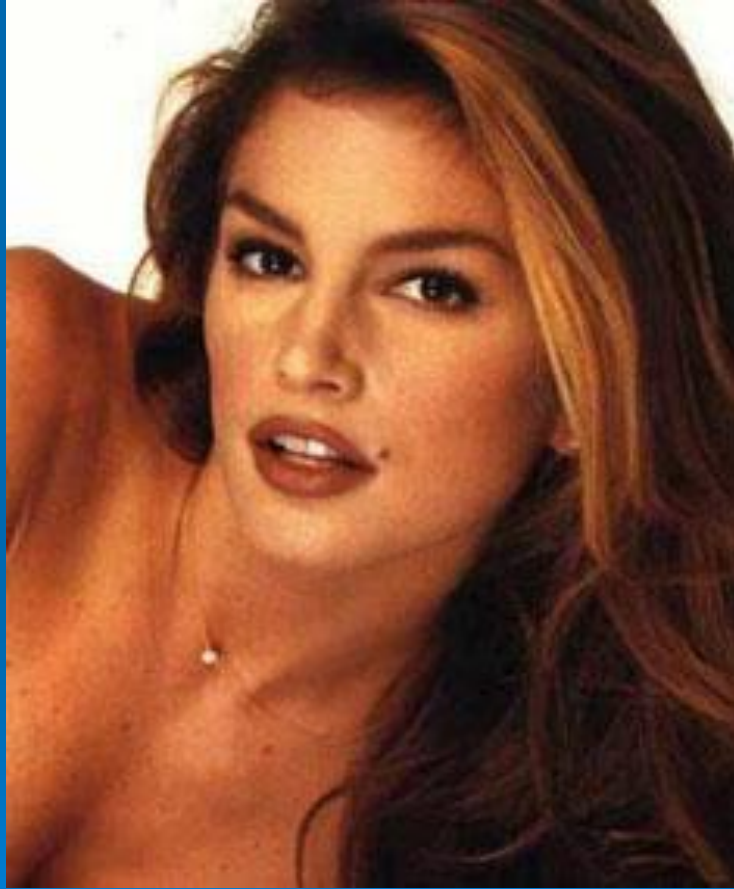
Oprah, George, Plastic Surgery



Jennifer Anniston




# What I looked like in 1995...

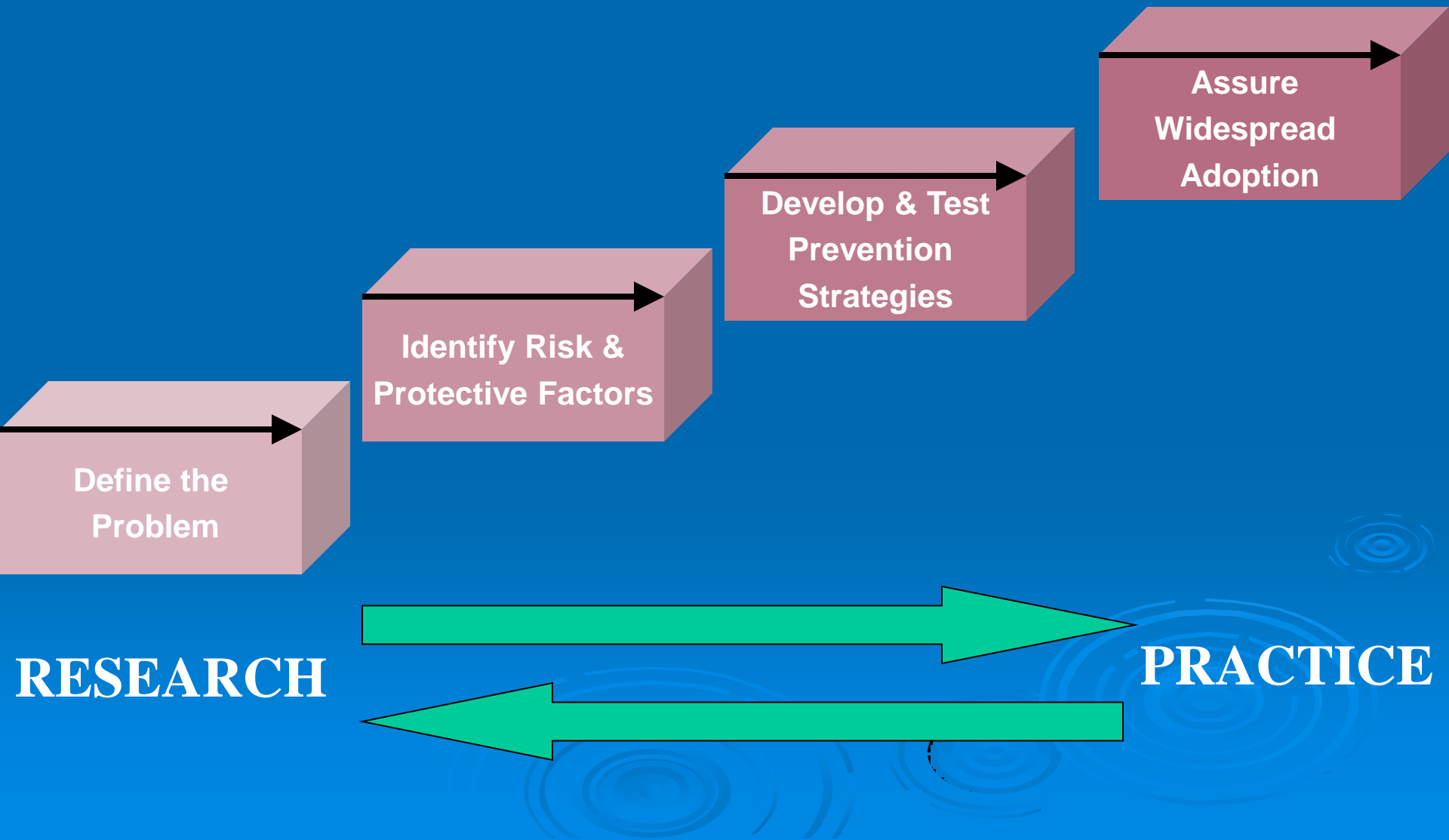


Rita K. Noonan

# Implementing What Works

- We have strategies that “work”
  - Little research to understand adoption & effective use
  - Poor use of resources & scientific discoveries
  - Result: more death, disability, and injury
- 

# The Research-Practice Link





# The Dissemination/ Implementation Process

Develop & Test  
Prevention  
Strategies

Dissemination/  
Implementation  
Process

Assure  
Widespread  
Adoption

RESEARCH



PRACTICE

# Why the black box?

Training

Reward Structures

R&D Bias in Funding



# KEVIN • COSTNER

All his life, Ray Kinsella was searching for his dreams.  
Then one day, his dreams came looking for him.



## FIELD OF DREAMS

A VIRGIN COMPANY PRODUCTION • A PHIL ALDEN ROBINSON FILM "FIELD OF DREAMS"  
KEVIN COSTNER • AND MADGAY • JAMES EARL JONES • RAY LIOTTA • BURT LANCASTER • BASED ON THE BOOK "SHOULESS JOE" BY W.P. KINSALL  
MUSIC BY JAMES HURNER • DIRECTOR OF PHOTOGRAPHY JOHN LINCOLN • PRODUCTION DESIGNER DENNIS GARNER • EXECUTIVE PRODUCER BYRON FRANKEL  
SCREENPLAY BY LAWRENCE GOELZON AND CHARLES GORDON • WRITTEN FOR THE SCREEN AND DIRECTED BY PHIL ALDEN ROBINSON  
MPG. RATED PG. PARENTS STRONGLY CAUTIONED. SOME MATERIAL MAY BE INAPPROPRIATE FOR CHILDREN UNDER 13.  
A UNIVERSAL PICTURES RELEASE



# If You Build It...

They may not find it

They may not feel invited

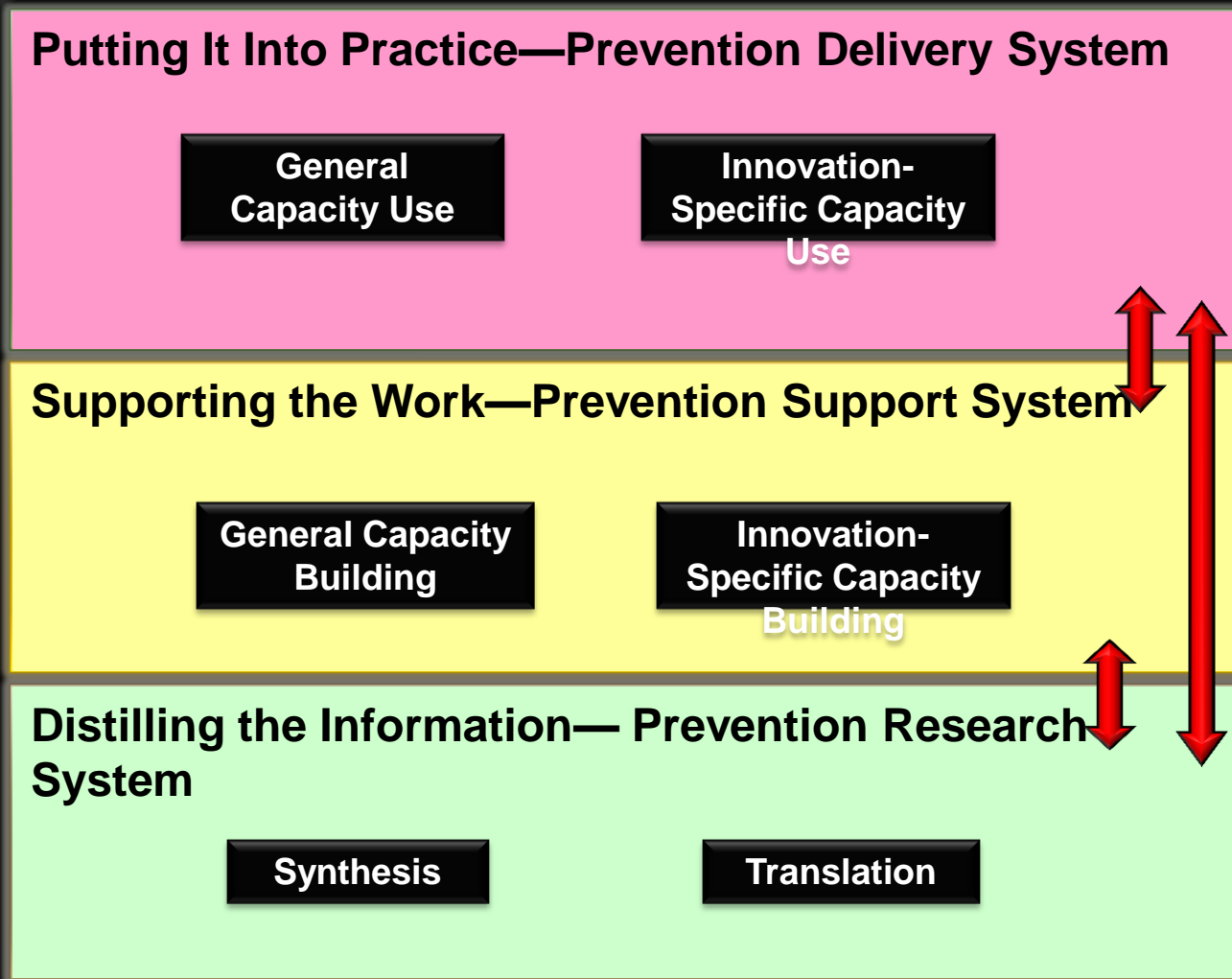
They may find it irrelevant

They may think they already have it

They may rebuild it into something else

They may love it & want 10 more

Excerpts from Emshoff (2008)



# Interactive Systems Framework

## Funding

### Putting It Into Practice—Prevention Delivery System

General  
Capacity Use

Innovation-  
Specific Capacity  
Use

### Supporting the Work—Prevention Support System

General Capacity  
Building

Innovation-  
Specific Capacity  
Building

### Distilling the Information—Prevention Research System

Synthesis

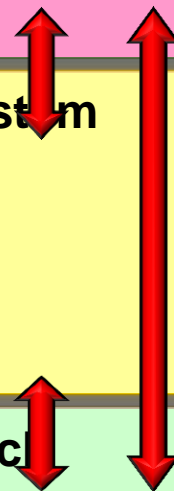
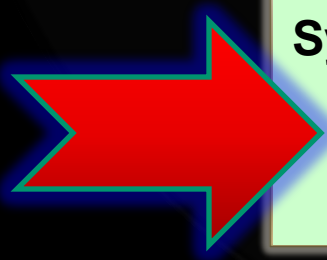
Translation

Policy

Climate

Existing Research and Theory

Source: CDC, 2009






# What would Coke do?



# Distillation System

- Clear, simple, persuasive communication
  - Knowledge of end users' preferences, learning style, networks
  - User-friendly, accessible materials
  - Core components (if possible)
  - Include end users in creation and dissemination
- 



# How do we communicate?



**"If I look at the  
mass I will never  
act. If I look at  
the one, I will."**

# DISSEMINATION & DIFFUSION

What are best practices in  
dissemination?

How does natural diffusion occur and  
how can we affect it?



# Scalability and Scaling Up

We often ask:

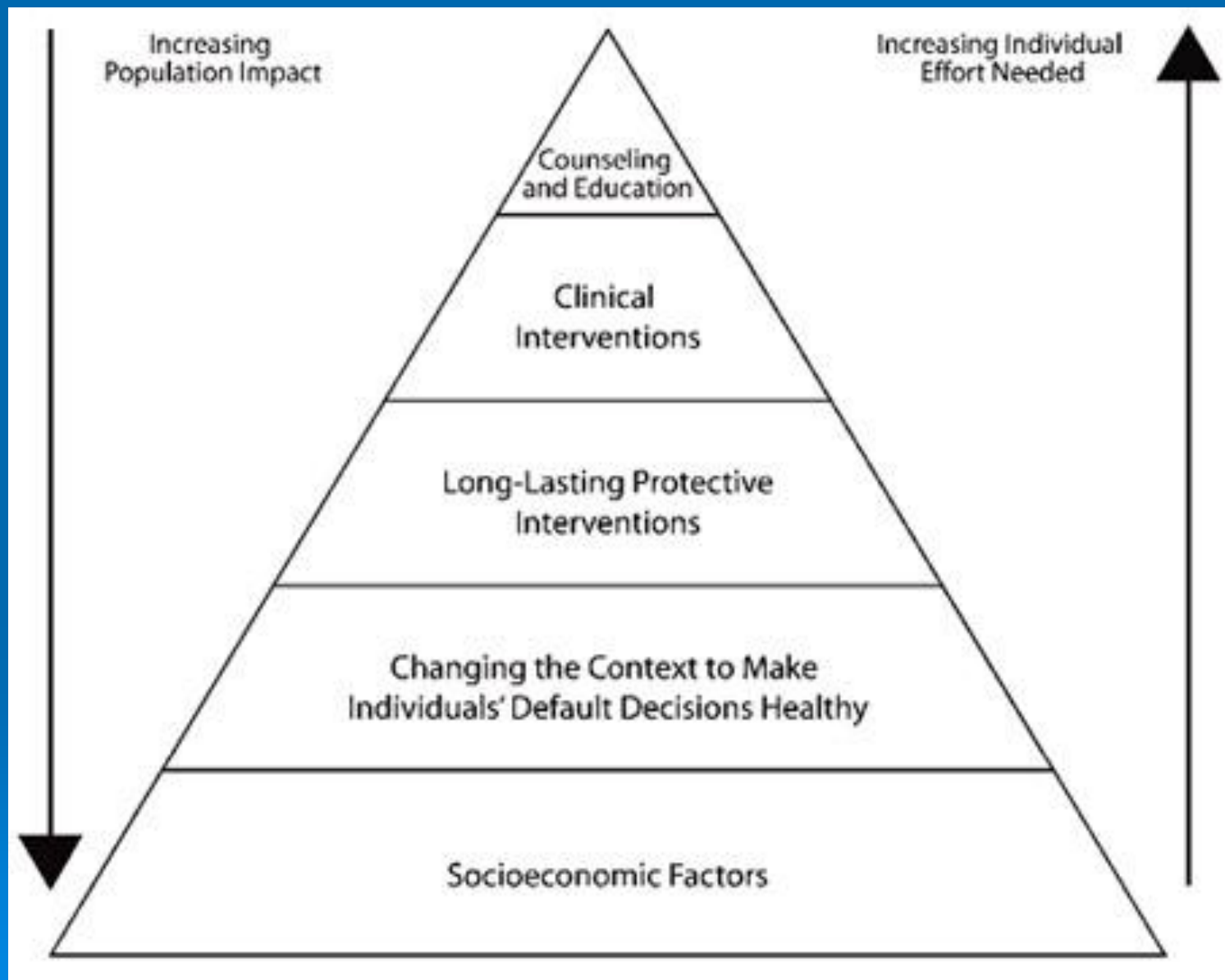
“Is it scalable?”

“Is it feasible?” (Arby’s Test Kitchen)




We need to ask:

“Is it **SCALE WORTHY?**”



# Dearing's Top 10 Dissemination Mistakes

1. We assume evidence matters in the decision making of potential adopters
2. We substitute our perceptions of those of potential adopters
3. We use intervention creators as intervention communicators
4. We introduce interventions before they are ready
5. We assume that information will influence decision-making

6. We confuse authority with influence
  7. We allow the first to adopt (innovators) to self-select into our dissemination efforts
  8. We fail to distinguish among change agents, authority figures, opinion leaders and innovation champions
  9. We select demonstration sites on criteria of motivation and capacity
  10. We advocate single interventions as the solution to a problem
- 

# Nudges & Persuasion

Choice Architecture:

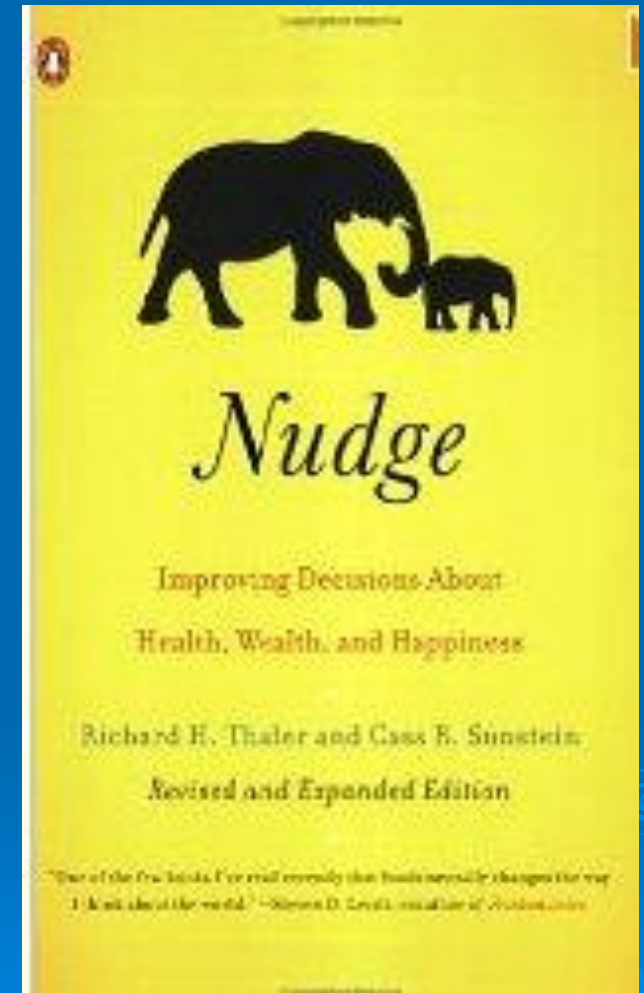
Healthy Defaults

Anchors

Follow the Herd

Loss Aversion

Framing



# Marketing Approach to Dissemination/Adoption

- Marketing is a population-based behavior management strategy
- 4 P's – product, place, price, and promotion
- Conduct consumer research with prospective adopters
- Build sustainable distribution channels to promote and deliver programs
- Improve access to easily implemented programs



Public Health Organizations Seeking to Disseminate Evidence-based Interventions

Wholesale  
Distribution  
Partners:

Employers

School  
Boards

City and  
County Boards

Food and Exercise  
Equipment  
Manufacturers

Retail  
Distribution  
Partners:

Worksites

Schools

Built  
Environment

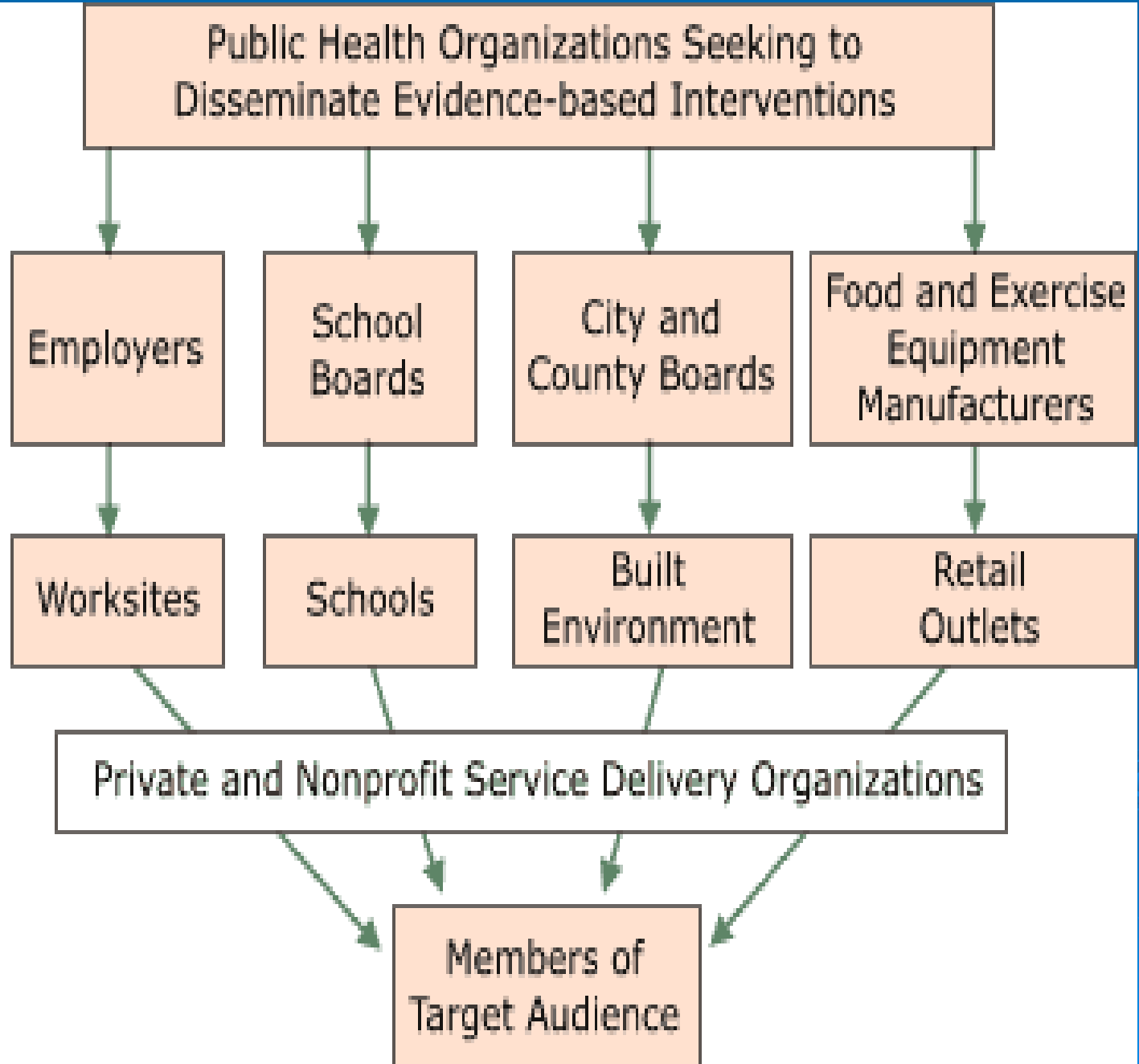
Retail  
Outlets

Service  
Providers:

Private and Nonprofit Service Delivery Organizations

Consumers:

Members of  
Target Audience



# Dissemination and Diffusion Research Questions

Who are the most influential people for disseminating? (read Dearing)

What are the most effective modalities? (know audience)

What are the effective components of dissemination messages (e.g., the role of evidence)?

Who should be the targets of dissemination (e.g., policy makers, practitioners)?



# Exercise

## 10 mins

Pretend you are trying to disseminate new guidelines for older adult fall prevention to health care providers (on your table)...

- 1) How would you translate them?
- 2) What independent and dependent variables would you examine in your evaluation?

# Here's what we did...

Judy Stevens, Margaret Kaniewski, Michele Huitric, & NCIPC Falls Team

The logo for STEADI, featuring the word "STEADI" in a bold, blue, sans-serif font. The letter "D" is stylized to include a white silhouette of an elderly person's head and shoulders, with a series of white dots trailing from the back of the head, suggesting movement or a path.

**Stopping Elderly  
Accidents, Deaths & Injuries**

# Formative Research

Individual interviews w providers

Recognize falls are a threat for their older patients

Lack information about standardized assessment methods & evidence-based prevention strategies

Tend to be reactive rather than proactive in addressing falls

# Focus Groups

Primary care providers

Geriatricians

Nurses

Nurse practitioners

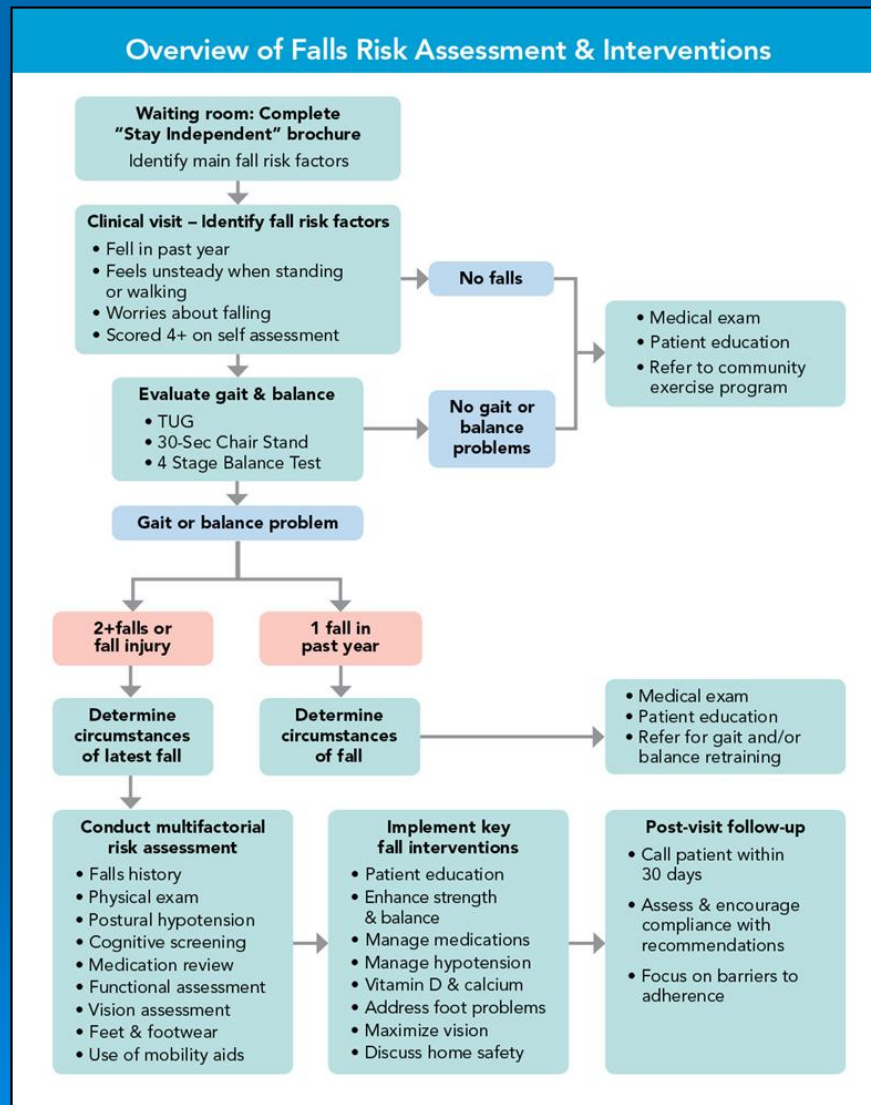
Physician assistants



# Tool Kit Folder



# Flow Chart Algorithm





# Stay Independent

## A self-risk assessment brochure

### Check Your Risk for Falling

| Please circle "Yes" or "No" for each statement below. |        |  | Facts About Falls   |
|---|--------|--|---|
| Yes (2)   | No (0) | I have fallen in the last 6 months.  | People who have fallen once are likely to fall again.   |
| Yes (2)   | No (0) | I use or have been advised to use a cane or walker to get around safely.   | People who have been advised to use a cane or walker may already be more likely to fall.      |
| Yes (1)   | No (0) | Sometimes I feel unsteady when I am walking.   | Unsteadiness or needing support while walking are signs of poor balance.                      |
| Yes (1)   | No (0) | I steady myself by holding onto furniture when walking at home.  | This is also a sign of poor balance.  |
| Yes (1)   | No (0) | I am worried about falling.  | People who are worried about falling are more likely to fall.                                 |
| Yes (1)   | No (0) | I need to push with my hands to stand up from a chair.   | This is a sign of weak leg muscles, a major reason for falling.                               |
| Yes (1)   | No (0) | I have some trouble stepping up onto a curb.   | This is also a sign of weak leg muscles.  |
| Yes (1)   | No (0) | I often have to rush to the toilet.  | Rushing to the bathroom, especially at night, increases your chance of falling.               |
| Yes (1)   | No (0) | I have lost some feeling in my feet.   | Numbness in your feet can cause stumbles and lead to falls.                                   |
| Yes (1)   | No (0) | I take medicine that sometimes makes me feel light-headed or more tired than usual.  | Side effects from medicines can sometimes increase your chance of falling.                    |
| Yes (1)   | No (0) | I take medicine to help me sleep or improve my mood.   | These medicines can sometimes increase your chance of falling.                                |
| Yes (1)   | No (0) | I often feel sad or depressed.   | Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls. |
| Total _____   |        | Add up the number of points for each "yes" answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor. |   |

This checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Rubenstein et al. *J Safety Res*; 2011;42(6):493-499). Adapted with permission of the authors.

### Four things to prevent falls

- 1 Begin to improve your balance and strength.
- 2 Ask your doctor to review your medications.
- 3 Get an updated vision exam.
- 4 Make your home safer.

- ▶ Re-examine your tripping hazards.
- ▶ Put on the proper shoes.
- ▶ Have a professional inspect your home for safety.



# Stay Independent

Falls are the main reason why older people lose their independence.

## Are you at risk?



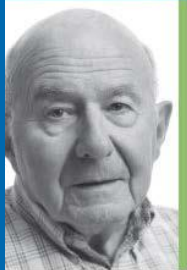
# Provider Resources

Provider materials in a spiral binder with tabs



# Fact Sheets

## Falls are a Major for Your Patients



- One-third of people 65 and older fall
- Less than half of the Medicare beneficiaries the previous year talked to their healthcare provider about fall prevention
- Every 29 minutes an older adult dies from a fall
- 1 out of 5 falls causes a serious injury or fracture.
- Over 2 million older adults are treated in hospital departments for nonfatal fall injuries each year
- Direct medical costs for fall injuries to older adults exceed \$13 billion annually. Hospital costs account for two-thirds of the total.

*The good news—as a provider, you can prevent many of these injuries.*

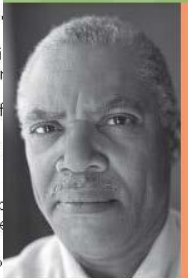
For more information, go to: [www.cdc.gov/injury](http://www.cdc.gov/injury)



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STEADI

## Medications Linked to Falls



**Although many medication classes have been linked to falls, the evidence is strongest for certain categories. Medication management interventions and side effects that may increase fall risk include:**

**Medication management means:**

- Eliminating medications if there is no active indication
- Reducing doses of necessary medications (e.g., to the lowest effective dose)
- Avoiding prescribing medications for an older adult if the risk from side effects outweighs the benefit (e.g., muscle relaxants)

**The MOST important intervention is to eliminate:**

- Psychoactive drugs, especially any benzodiazepines
- Any medications that have anticholinergic effects
- Sedating OTCs, specifically Tylenol PM (w/ Benadryl)

There is a full searchable list of the psychoactive medications and medication classes linked to falls at [www.cdc.gov/injury/STEADI](http://www.cdc.gov/injury/STEADI).

For more information about medications, go to: [www.cdc.gov/injury/STEADI](http://www.cdc.gov/injury/STEADI)



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## Risk Factors For Falls



**Research has identified many risk factors that contribute to falling—some of these are modifiable.**

Most falls are caused by the interaction of multiple risk factors. The more risk factors a person has, the greater their chances of falling. Health care providers can help reduce a person's risk by reducing or minimizing that individual's risk factors.

To prevent falls, providers should focus **FIRST** on these modifiable risk factors:

- Lower body weakness
- Difficulties with gait and balance
- Use of psychoactive medications
- Postural dizziness
- Poor vision
- Problems with feet and/or shoes
- Home hazards

Fall risk factors are categorized as intrinsic or extrinsic.

| Intrinsic   | Extrinsic                        |
|---|----------------------------------|
| Advanced age  | Lack of stair handrails          |
| Previous falls  | Poor stair design                |
| Muscle weakness   | Lack of bathroom grab bars       |
| Gait & balance problems   | Dim lighting or glare            |
| Poor vision   | Obstacles & tripping hazards     |
| Postural hypotension  | Slippery or uneven surfaces      |
| Chronic conditions including arthritis, diabetes, stroke, Parkinson's, incontinence, dementia | Psychoactive medications         |
| Fear of falling   | Improper use of assistive device |

For more information, go to: [www.cdc.gov/injury/STEADI](http://www.cdc.gov/injury/STEADI)



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# Gait & Balance Assessment Tools



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Patient: \_\_\_\_\_ Date: \_\_\_\_\_

## The Timed Up and Go

**Purpose:** To assess mobility.

**Equipment:** A stopwatch

Patients wear their regular footwear and canes if needed. Begin by having the patient sit back on the chair and identify a line 3 meters or 10 feet away on the floor.

**Instructions to the patient:**  
When I say "Go," I want you to:

1. Stand up from the chair
2. Walk to the line on the floor at your normal pace
3. Turn
4. Walk back to the chair at your normal pace
5. Sit down again

On the word "Go" begin timing.

Stop timing after patient has sat back down on the chair.

**Time:** \_\_\_\_\_ seconds


*An older adult who takes more than 14 seconds to complete the TUG is at high risk for falling.*

Observe the patient's postural stability, gait, and balance.

**Circle all that apply:**

Slow tentative pace • Shuffling • Short steps • Little or no arm swing • Loss of balance • En bloc turning • Not using assistive device

Notes:





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Patient: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM/PM

## The 4-Stage Balance Test

**Purpose:** To assess static balance

**Equipment:** A stopwatch

**Overview:** There are four progressively more challenging positions. Patients should not use an assistive device (cane or walker) and keep their eyes open.

Describe and demonstrate each position. Stand next to the patient, hold his or her arm and help assume the correct foot position.

When the patient is steady, let go, but remain ready to catch the patient if he or she should lose balance.

If the patient can hold a position for 10 seconds without moving his or her feet or needing support, go on to the next position. If not, stop the test.

**Instructions to the patient:** I'm going to show you four positions. Try to stand in each position for 10 seconds. You can hold your arms out or move your body to help keep your balance but don't move your feet. Hold this position until I tell you to stop.

For each stage, say "Ready, begin" and begin timing. After 10 seconds, say "Stop."

See back page for detailed patient instructions and illustrations of the four positions.





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Patient: \_\_\_\_\_ Date: \_\_\_\_\_

## The 30-Second Chair Stand

**Purpose:** To test leg strength and endurance

**Equipment:**

- A chair with a straight back without armrests
- A stopwatch

**Instructions to the patient:**

1. Sit in the middle of the chair.
2. Place your hands on the opposite shoulder crossed at the wrists.
3. Keep your feet flat on the floor.
4. Keep your back straight and keep your arms against your chest.
5. On "Go," rise to a full standing position and then sit back down again.
6. Repeat this for 30 seconds.

On "Go," begin timing.

Count the number of times the patient can stand up and sit down in 30 seconds.


If the patient is over halfway to a standing position, 30 seconds have elapsed, count it as a stand.

Record the number of times the patient stands up and sits down.

**Number:** \_\_\_\_\_ **Rating (See chart):** \_\_\_\_\_

*A below average rating indicates a high risk for falling.*

Notes:





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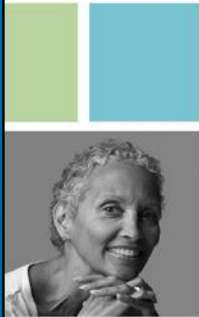


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# Instructions for Measuring Orthostatic Blood Pressure









## How to Measure Orthostatic Blood Pressure

1. Have the patient lie down for 5 minutes
2. Measure blood pressure and pulse rate
3. Have the patient stand
4. Repeat blood pressure and pulse rate measurements after standing 1 and 3 minutes.

A decrease in systolic blood pressure of  $\geq 20$  mm Hg or experiencing symptoms of lightheadedness or dizziness is considered abnormal.

| Position   |   | Time      | BP                               | Associated Symptoms |
|------------|---|-----------|----------------------------------|---------------------|
| Lying Down |    | 5 Minutes | BP ____ / ____<br>HR ____ / ____ |                     |
| Standing   |   | 1 Minutes | BP ____ / ____<br>HR ____ / ____ |                     |
| Standing   |  | 3 Minutes | BP ____ / ____<br>HR ____ / ____ |                     |



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# Three Case Studies

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## CASE STUDY 1



Mrs. Booker is a 66 year old woman who lives in her own home. She has come in to see her doctor for a wellness visit.

### History

When asked, Mrs. Booker reports she fell while walking with a friend, they were talking and she was going, and she tripped over a crack in the sidewalk.

Mrs. Booker reports that she usually walks in her neighborhood. She feels steady when she is out of doors. She tries to avoid potholes and cracks in the sidewalk so she won't trip. She doesn't exercise. Walking is her only form of exercise.

### Medical Problem List

Seizure disorder  
Schizoaffective disorder  
Chronic kidney disease stage 3  
Hypothyroidism

### Medications

1. Depakote 250 mg twice daily
2. Zyprexa 12.5 mg daily
3. Ativan 0.5 mg twice daily
4. Levothyroxine 750 mcg daily
5. Colace 250 mg daily
6. Tylenol 500 mg 4 times daily as needed

### Review of Systems

A 14-point review of systems is positive for urinary incontinence, and nocturia > 2 times per night.



## CASE STUDY 2

Mr. Ying is an 84 year old Asian male who lives in a clinic visit by his son, who assists with the previously outgoing and sociable, Mr. Ying is now limiting his outside activities.

### History Of Current Problem

Mr. Ying stated that for the past year he has felt dizzy after sitting or lying down and that he often needs furniture or walls shortly after standing. His dizziness happens several times per week.

Mr. Ying cannot identify any recent changes in his changes to his routine that would explain his symptoms, no pattern and he experiences dizziness at different times of the day and evening. He denies experiencing syncope, or fainting, accompanying his dizziness.

Mr. Ying also remarks that, independent of his changes to his routine, he feels unsteady on his feet when walking. His son sees his father "teetering." Mr. Ying requires he started using a cane but doesn't like to use it in the house.

When asked about previous falls, he says he has fallen once. His elderly neighbor recently fell and is now he's fearful about falling and becoming a burden to his family.

Although Mr. Ying has spinal stenosis, a recent MRI showed a relieved severe low back pain. Now he suffers from stiffness for several hours in the morning. He denies weakness in his legs.

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## CASE STUDY 3



Mrs. White is an outgoing 79 year old white woman who lives in an assisted living facility. She has come in with her son for a routine follow-up visit. Her son reports that she was seen in the hospital emergency room a week ago because she fell when she was getting out of the shower. She fell backwards and bumped the back of her head against the wall.

Her son remarks that in the past year his mother has had "too many falls to count". Mrs. White agrees that she falls a lot but she's fatalistic. "Old people fall, that's just how it is", she says.

Mrs. White has a history of hypertension, hyperlipidemia, diabetes, coronary artery disease, and congestive heart failure.

### HISTORY

Mrs. White reports that she used to walk "just fine," but about two years ago she began falling for no apparent reason. Sometimes she'll trip on a carpet, other times she just loses her balance when she's walking or turning. Once she fell off a chair face first into a wall. Another time she rolled out of bed.

Mrs. White usually falls indoors and has fallen during the day and at night. Sometimes she falls at night when she gets up to void. She sleeps deeply but is restless, so for the past eight years has been taking Clonazepam to help her sleep.

For the past two years, she has been using a rollator walker. Before that she had a front-wheeled walker but couldn't get used to it. She used to go to the Silver Sneakers exercise classes at her local gym but stopped going about five years ago when she developed numbness in her feet and knee pain. She used to enjoy walking but reports that she hardly ever goes outside now because she's so afraid of falling and breaking her hip.



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# Talking with Patients Based on Stages of Change



## Talking about Fall Prevention with Your Patients



Many fall prevention strategies require patients to change their behaviors such as:

- Attending a fall prevention program
- Doing prescribed exercises at home
- Changing their home environment

We know that behavior change is difficult. Traditional advice and patient education often does not work.

Our understanding of the change process, based on research in smoking cessation and alcohol abuse, depicts patients as being in a process of change.


The Stages of Change model has been validated and applied to a variety of behaviors including:

- Smoking cessation
- Contraceptive use
- Exercise behavior
- Dietary behavior

The Stages of Change model illustrates behavior change as a gradual process. The patient moves from being uninterested, unaware or unwilling to make a change (precontemplation); to considering a change (contemplation); to deciding and preparing to make a change (preparation and action).

| Stages of Change Model |   |
|------------------------|---|
| Stage of change        | Patient behavior  |
| Precontemplation       | Does not think about change; is resigned or fatalistic<br>Does not believe in or downplays personal susceptibility<br>Displaces blame |
| Contemplation          | Weights benefits vs costs of proposed behavior change   |
| Preparation            | Experiments with small changes  |
| Action                 | Takes definitive action to change   |
| Maintenance            | Maintains new behavior over time  |
| Relapse                | Experiences normal part of process of change<br>Usually feels demoralized   |

From: Prochaska JO, DiClemente CC, Norcross JC. In search of how people change. Am Psychol 1992;47:1102-4.



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| Contemplation Stage  | Patient  | Provider  |
|--|--|---|
| <p>The patient is considering the possibility that he or she may be at risk of falling.</p> <p>Goal: Patient will examine benefits and barriers to change.</p> | I'd like to exercise but I don't because I'm afraid I'll get too tired.  | To prevent falls, it's important to do strength and balance exercises* at least 3 times a week. You can do these exercises at home or I can recommend some fall prevention classes.                                   |
|  | My friend down the street fell and ended up in a nursing home.   | Preventing falls can prevent broken hips and help you stay independent.   |
|  | I have so many other medical appointments already.   | I have patients very much like you who do these exercises* to prevent falls.<br><br>These types of exercises* only take a few minutes a day.  |
|  | I already walk for exercise.   | Walking is terrific exercise for keeping your heart and lungs in good condition, but it may not prevent you from falling.   |
|  | <p>I don't want to ask my daughter to drive me to the exercise class.</p> <p>Getting to the senior center is so hard now that I don't drive.</p> <p>I have to take care of my husband. I don't have time for this.</p> | <p>There are quite a few simple exercises* you can do to keep yourself from falling.</p> <p>They don't take a lot of time and you don't have to rely on other people. You don't even have to leave your own home.</p> |

\* The National Institute on Aging has created an exercise book and DVD for healthy older adults to use at home. Go to:  
[www.nia.nih.gov/HealthInformation/Publications/ExerciseGuide](http://www.nia.nih.gov/HealthInformation/Publications/ExerciseGuide).

## Fall Risk Checklist

Patient: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ AM/PM

| Fall Risk Factor Identified  | Factor Present?  | Notes |
|--|--|-------|
| <b>Falls History</b>   |  |       |
| Any falls in past year?  | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| Worries about falling or feels unsteady when standing or walking?  | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| <b>Medical Conditions</b>  |  |       |
| Problems with heart rate and/or rhythm   | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| Cognitive impairment   | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| Incontinence   | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| Depression   | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| Foot problems  | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| Other medical conditions (Specify)   | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| <b>Medications</b>   |  |       |
| Any psychoactive medications, medications with anticholinergic side effects, and/or sedating OTCs? (e.g., Benadryl, Tylenol PM)        | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| <b>Gait, Balance &amp; Strength</b>  |  |       |
| Timed Up and Go (TUG) Test<br>>14 seconds  | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| 4-Stage Balance Test<br>Full tandem stance <10 seconds   | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| 30-Second Chair Stand Test<br>Below average score (See table on back)  | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| <b>Vision</b>  |  |       |
| Acuity <20/40 OR no eye exam in >1 year  | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| <b>Postural Hypotension</b>  |  |       |
| A decrease in systolic BP $\geq 20$ mm Hg or a diastolic bp of $\geq 10$ mm Hg or lightheadedness or dizziness from lying to standing? | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| <b>Other Risk Factors (Specify)</b>  |  |       |
|  | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
|  | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |



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# Summary of patient's fall risk factors



# Referral Forms

## Specialists

### Fall Prevention Patient Referral Form

Health Provider Organization  
Street  
City, State, Zip

|   |                                   |
|---|-----------------------------------|
| Patient:  | Referred to:                      |
| Sex:                      DOB:  |                                   |
| Address:  | Address:                          |
| Phone:  | Phone:                            |
| Email:  | Email:                            |
| Diagnosis:  |                                   |
| Type of Referral  |                                   |
| Specialist  | Type (See back of form):          |
| Fall prevention class   | See nurse for class options       |
| Reason for Referral   |                                   |
| Gait or mobility problems   | Medication review & consultation  |
| Balance difficulties  | Inadequate or improper footwear   |
| Lower body weakness   | Foot abnormalities                |
| Postural hypotension  | Vision <20/40 in   R    L    Both |
| Suspected neurological condition<br>(e.g., Parkinson's disease, dementia) | Home safety evaluation            |
| Other   |                                   |
| Other relevant information:   |                                   |
| Referrer signature:   | Date:                             |



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## Fall Prevention Classes

### Recommended Fall Prevention Classes

Health Provider Organization  
Street  
City, State, Zip

| Class | Location | Day & Time | Cost |
|-------|----------|------------|------|
|       |          |            |      |
|       |          |            |      |
|       |          |            |      |
|       |          |            |      |
|       |          |            |      |
|       |          |            |      |
|       |          |            |      |
|       |          |            |      |

#### Notes:

Research shows that to reduce falls, the exercises MUST focus on improving balance and strength, be progressive (get more challenging over time) and be practiced for at least 50 hours.

The National Institute on Aging has created an exercise book and DVD for healthy older adults to use at home. You can order these by going to:  
[www.nia.nih.gov/HealthInformation/Publications/ExerciseGuide](http://www.nia.nih.gov/HealthInformation/Publications/ExerciseGuide).



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# Stand-alone Provider Resources



# Tri-fold Pocket Guide



## Preventing Falls in Older Patients Pocket Guide

### Key Facts about Falls:

- 1/3 of older adults (age 65 plus) fall each year.
- Many patients who have fallen do not talk about it.
- Falls cause >19,000 deaths & cost >\$22 billion.

### RITUAL:

Review self-assessment brochure

Identify risk factors

Test gait & balance

Undertake multifactorial assessment

Apply interventions

Later, follow-up

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Accidents, Deaths & Injuries

### Steps for Fall Prevention

Proactive—ask all patients 65+ if they've fallen in the past year.

Identify & address fall risk factors:

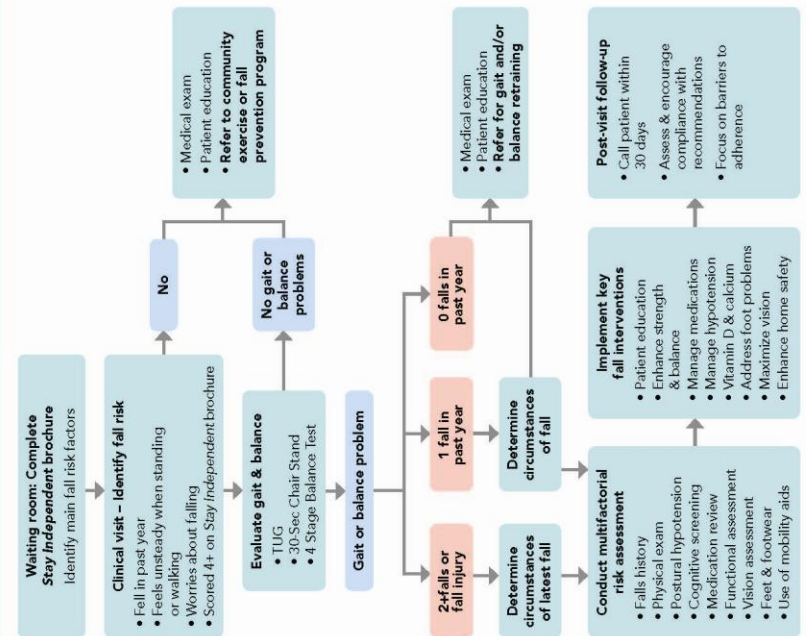
- Lower body weakness
- Gait and balance problems
- Psychoactive medications
- Postural dizziness
- Poor vision
- Problems with feet and/or shoes
- Home safety
- Referral as needed to specialists or community programs.
- Follow-up with patient within 30 days.

### Fall Interventions

- Patient education
- Enhance strength & balance
- Manage medications
- Manage hypotension
- Supplement vitamin D & calcium

- Address foot problems
- Maximize vision
- Enhance home safety

## Overview of Falls Risk Assessment & Interventions



## Integrating Falls Assessment & Interventions into Practice

Working together, many types of healthcare providers can help identify and manage patients at risk of falling.

Help reduce falls by screening all older persons once a year for previous falls and/or balance problems.

For those who screen positive, perform a fall risk assessment and help patients understand and act upon the findings using proven prevention strategies.

| Assessments &/or Interventions  | Identify who in your practice can do this | What it involves  |
|---|---|---|
| Screen all older patients for falls   |   | <ul style="list-style-type: none"> <li>Have each patient complete the <i>Stay Independent</i> brochure—help if necessary</li> </ul>   |
| Identify modifiable fall risk factors   |   | <ul style="list-style-type: none"> <li>Review brochure &amp; take a falls history</li> </ul>  |
| Assess gait, balance & lower body strength.<br>Address identified deficits        |   | <p>Administer one or more gait &amp; balance test:</p> <ul style="list-style-type: none"> <li>Timed Up &amp; Go Test</li> <li>4-Stage Balance Test</li> <li>30-Second Chair Stand Test</li> </ul> <p>Observe and record patient's postural stability, gait, stride length, and sway</p> <ul style="list-style-type: none"> <li>As needed, refer to physical therapist or recommend community exercise program</li> </ul> <p>PTs can assess gait &amp; balance, provide one-on-one progressive balance &amp; gait retraining &amp; recommend &amp; teach correct use of assistive devices.</p> |
| Conduct focused physical exam<br>Address modifiable and/or treatable risk factors |   | <p>In addition to a customary medical exam:</p> <ul style="list-style-type: none"> <li>Assess muscle tone, look for increased tone, hypertonia (cogwheeling)</li> <li>Screen for cognitive impairment and depression</li> <li>Examine feet &amp; evaluate footwear. Look for structural abnormalities, deficits in sensation &amp; proprioception</li> </ul> <p>If needed, refer to Podiatrists or Pedorthists.</p> <p>These specialists can identify &amp; treat foot problems &amp; can prescribe corrective footwear &amp; orthotics</p>   |
| Assess for & manage postural hypotension  |   | <ul style="list-style-type: none"> <li>Check supine &amp; standing blood pressure using 1-page protocol on measuring orthostatic bp</li> <li>Recommend medication changes to reduce hypotension</li> <li>Monitor patient as he/she makes recommended changes</li> <li>Provide patient with counseling &amp; CDC brochure on managing hypotension</li> </ul>   |
| Review & manage medications   |   | <ul style="list-style-type: none"> <li>Taper &amp; stop psychoactive medications if there are no clear indications. Try to reduce doses of necessary psychoactive medications</li> <li>Recommend changes to reduce psychoactive medications</li> <li>Monitor patient as he/she makes recommended changes</li> </ul>   |
| Assess visual acuity & optimize vision  |   | <ul style="list-style-type: none"> <li>Administer brief vision test</li> <li>Refer to Ophthalmologists or Optometrists</li> </ul> <p>These specialists can identify &amp; treat medical conditions contributing to vision problems &amp; address problems with visual acuity &amp; contrast sensitivity</p>   |
| Increase vitamin D  |   | <ul style="list-style-type: none"> <li>Recommend at least 800 IU vitamin D supplement</li> </ul>  |
| Discuss home safety & how to reduce fall hazards                                  |   | <ul style="list-style-type: none"> <li>Counsel about reducing fall hazards. Give CDC brochure, <i>Check for Safety</i></li> <li>Refer to Occupational Therapist</li> </ul>  |
| Educate about what causes falls & how to prevent them                             |   | <ul style="list-style-type: none"> <li>Provide education about fall prevention strategies</li> <li>Give CDC brochure, <i>What YOU Can Do to Prevent Falls</i></li> </ul>  |



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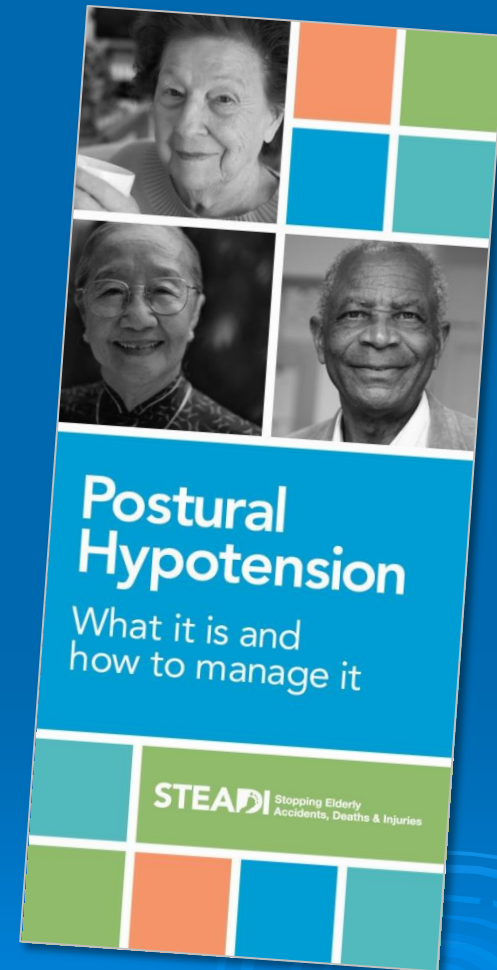
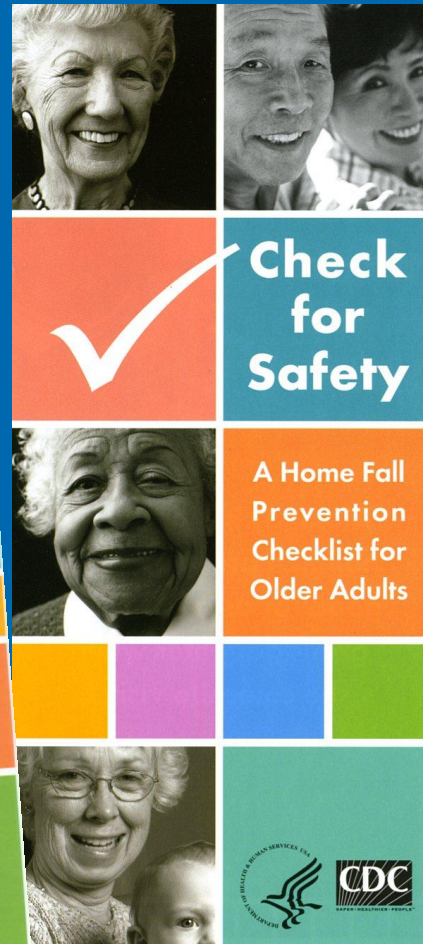
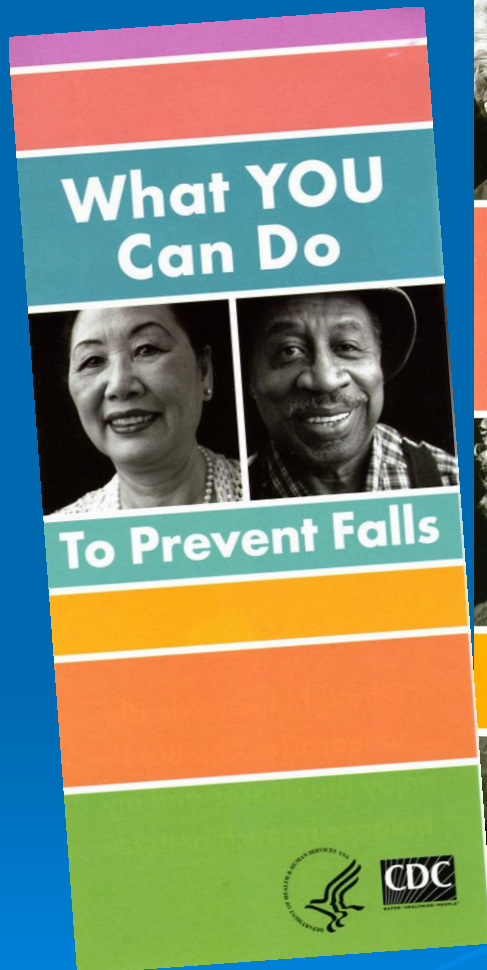
# Wall Chart

## Integrating fall risk reduction into clinical practice

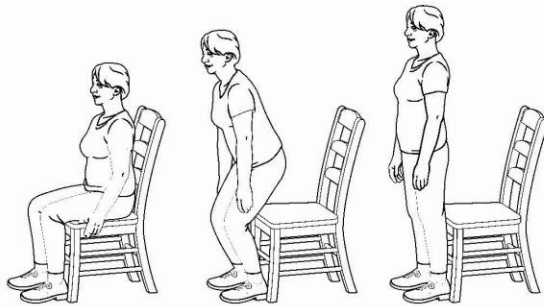
# Patient Educational Materials



# CDC Brochures







## Chair Rise Exercise

**What it does:** Strengthens the muscles in your thighs & buttocks.

**Goal:** To do this exercise without using your hands as you become stronger.

**How to do it:**

1. Sit toward the front of a sturdy chair with your knees bent & feet flat on the floor, shoulder-width apart.
2. Rest your hands lightly on the seat on either side of you, keeping your back & neck straight & chest slightly forward.
3. Breathe in slowly.
4. Lean forward & feel your weight on the front of your feet.
5. Breathe out & slowly stand up, using your hands as little as possible.
6. Pause for a full breath in & out.
7. Breathe in as you slowly sit down. Do not let yourself collapse back down into the chair. Rather, control your lowering as much as possible.
8. Breathe out.
9. Repeat 10–15 times. If this number is too hard for you when you first start practicing this exercise, begin with fewer & work up to this number.
10. Rest for a minute & then do another set of 10–15.



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# Handout of simple leg strengthening exercise

# Next Steps with



Train providers to use materials

Link w community programs

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# CAPACITY BUILDING

What is it? When/how is it used?

Why is it important for bridging  
research to practice?

How do we build it?

How do we evaluate it?



# Interactive Systems Framework

Funding

Putting It Into Practice—Prevention Delivery System

General  
Capacity Use

Innovation-  
Specific Capacity  
Use

Supporting the Work—Prevention Support System

General Capacity  
Building

Innovation-  
Specific Capacity  
Building

Distilling the Information—Prevention Research System

Synthesis

Translation

Existing Research and Theory

Policy

Climate



Coke's Infrastructure

# Building &/or Capitalizing on Existing Distribution Channels

- Most important opportunity for moving evidence based programs into practice
- Child and Adolescent Trial for Cardiovascular Health – CATCH
- NOT on Tobacco





# Support (capacity-building) System

- \* Knowledge is not sufficient to change behavior. Think: smoking, fast food.
- \* **Capacity:** motivation, skill sets, training, infrastructure, staff.

Fixsen's Core Implementation Components  
(compensatory)

Kerner & Hall



# Importance of Capacity

Systematic Training

Coaching and Monitoring

Leadership – key to findings

All these influence implementation



# Joyce & Showers Meta-Analysis (2002) of use of new curriculum in a classroom

| <b>Training Method</b> | <b>Knowledge</b> | <b>Skill Demonstration</b> | <b>Use in Class</b> |
|------------------------|------------------|----------------------------|---------------------|
| Theory & Discussion    | 10%              | 5%                         | 0%                  |
| Training Demo          | 30%              | 20%                        | 0%                  |
| Practice & Feedback    | 60%              | 60%                        | 5%                  |
| Coaching in Classroom  | 95%              | 95%                        | 95%                 |

# “Making it Happen!”

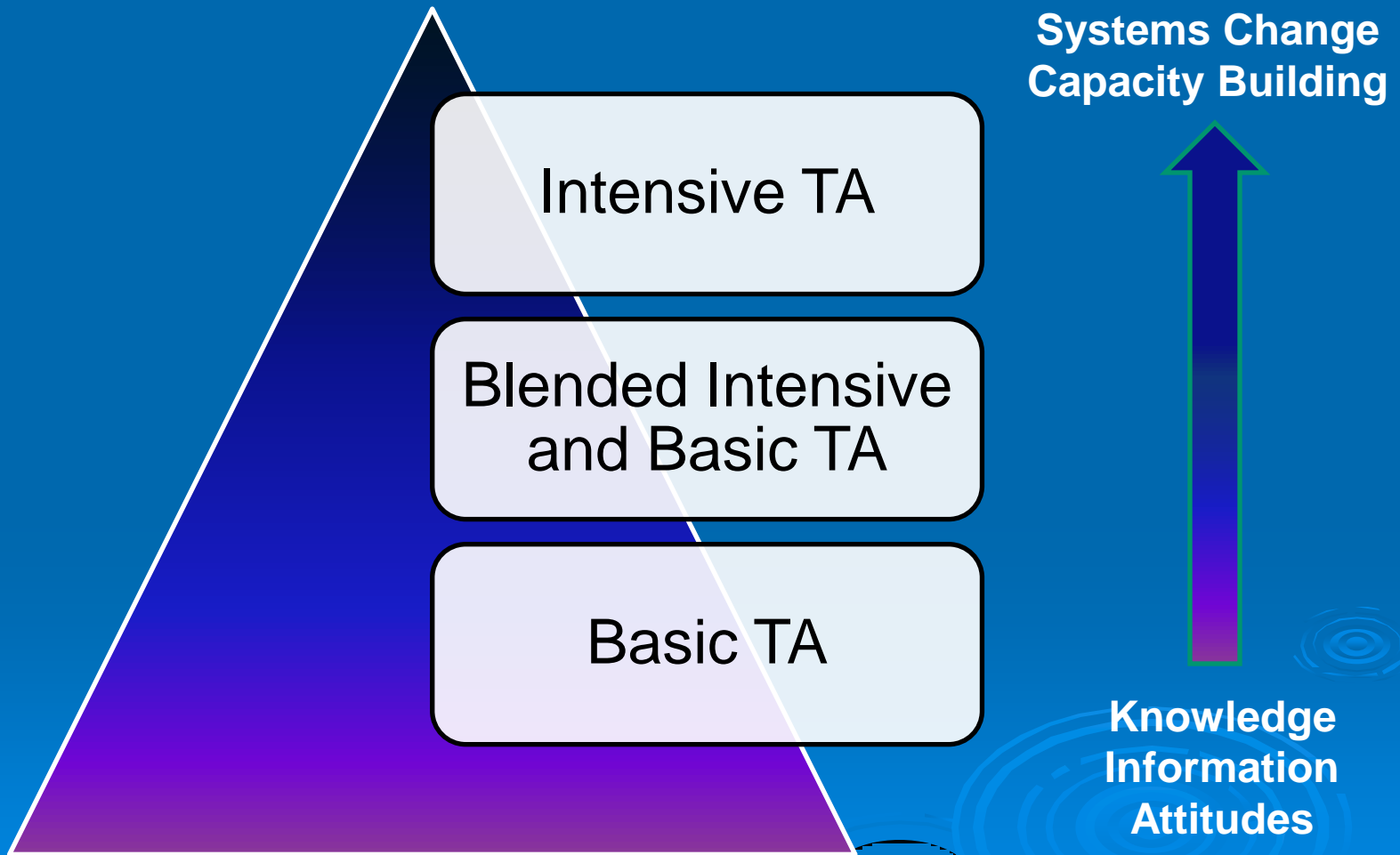
Active use of strategies to support a change process or a “new way or work”

Active installation of supports for the implementation of a new practice, process, or policy.

These strategies and supports to “make it happen” often come in the form of **Technical Assistance**.



# Matching TA to Desired Outcomes



# Basic Technical Assistance

## Examples:

Presentations

Workshops

Professional development

Isolated facilitated processes

Short term or episodic consultation

# Intensive Technical Assistance

Intensive TA involves. . .

- Considerable planning

- Frequent communication

- On-site work

- Collaboration at multiple levels

- Coaching

- Process and outcome evaluation at multiple levels to build capacity and achieve systems change

# Recommendations for Evaluators

- Understand and evaluate components of TA
- Evaluation of a program is incomplete unless you have identified capacity building and measured it





# Discussion

What are the key independent and dependent variables in capacity building evaluation?

What kind of evaluation design might you use?

# Interactive Systems Framework

## Funding

### Putting It Into Practice—Prevention Delivery System

General  
Capacity Use

Innovation-  
Specific Capacity  
Use

### Supporting the Work—Prevention Support System

General Capacity  
Building

Innovation-  
Specific Capacity  
Building

### Distilling the Information—Prevention Research System

Synthesis

Translation

Existing Research and Theory

Policy

Climate

# ADOPTION

- Why do organizations adopt programs?
- What characteristics of individuals, organizations, and programs (and their interaction) affect adoption?
- How can evaluation research help answer these questions?



# Delivery (or practice) System

Adoption influenced by individual users' perceptions (e.g., Hard to use? Do I benefit?)

Ex: DARE Program. Widely adopted, but not effective. Why so popular?

Organizational factors: fit with mission?  
Culture? Administrative support?  
Bureaucratic obstacles?



Why Don't They Come After You  
Built It?



# *Adoption/Diffusion Principles*

*Rogers, 1962*

- relative advantage – compared to alternatives
- compatibility - the consistency of the innovation with the values and needs of an adopter
- complexity - the simplicity or complexity of the innovation itself
- trialability - the ability to try out an innovation
- observability - the ability to observe directly the effects and benefits of the innovation
- flexibility – degree to which the program can be adapted to local conditions

# Adoption Research Questions

Who is responsible for making adoption decisions within what kinds of organizations?

What factors do decision-makers consider when choosing whether or not to adopt?

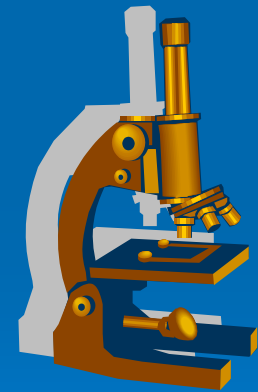
What are the characteristics of organizations that are high or low adopters?

What program characteristics interact with these processes?

How can we influence these processes?

# Recommendations for Evaluators

- Evaluating adoption processes is critical to making a public health impact
- Study it with as much rigor as programmatic outcomes





# Discussion

How would you evaluate the adoption of AGS guidelines for fall prevention?



# IMPLEMENTATION

- What are the issues and processes associated with implementing programs (e.g., adaptation, fidelity)?
- How do we evaluate implementation processes?
- How do we understand and study implementation as both process and outcome?



# Fixsen's



# Components

Selection

Pre-service Training

Consultation and Coaching

Staff Evaluation

Program Evaluation

Facilitative Administrative Supports



# Effectiveness and Implementation – 2 axes

HI Effectiveness

HI Implementation

\*Model program implemented with fidelity

HI Effectiveness

LO Implementation

\*Half of model program sessions are delivered

LO Effectiveness

HI Implementation

\*DARE implemented with fidelity to content and delivery format

LO Effectiveness

LO Implementation

\*One-hour session in assembly hall delivered by a boring person

# Stages of Implementation

## (Fixsen et al, 2005)

### Stages of the Implementation Process

Exploration & Adoption



Program Installation



Initial Implementation



Full Operation



Innovation



Sustainability

- Implementation is a process not an event.
- It is important for organizations and systems to stay on track and recognize and solve common implementation problems in a timely and effective manner.
- During initial stages of implementation, success is associated with a range of contextual, organizational variables and with fidelity to the evidence-based practice or program.

# Special Focus – Fidelity and Adaptation

Related, but not polar opposites

No longer an issue of which is better  
(mostly!)



# Program Fidelity

- The degree of fit between the protocol, program model or developer-defined components of a program and its actual implementation in a given organizational or community setting – consistency with a curriculum, protocol, manual, or guidelines

# Program Adaptation

- Deliberate or accidental modification of the program, including:
  - deletions or additions
  - modifications
  - changes in intensity
  - cultural and other modifications required by local circumstances

# Reasons for Adaptation

➤ To fit:

- Culture
  - Needs
  - Resources
  - History
  - Norms
  - Values
  - Assets
- 
- The bottom of the slide features several concentric, light-blue circular ripples on a darker blue background, resembling water droplets or a stone thrown into a pond.

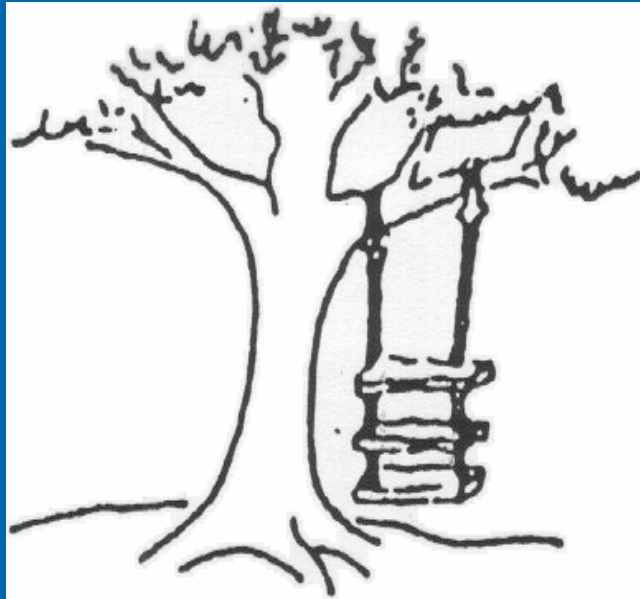
# Value of Adaptation

- Cultural adaptation has been found necessary to engage the interest of program participants.
- Practitioners are concerned that “not one size fits all”
- May lead to more interest, credibility, and attentiveness to the program by both practitioners and consumers

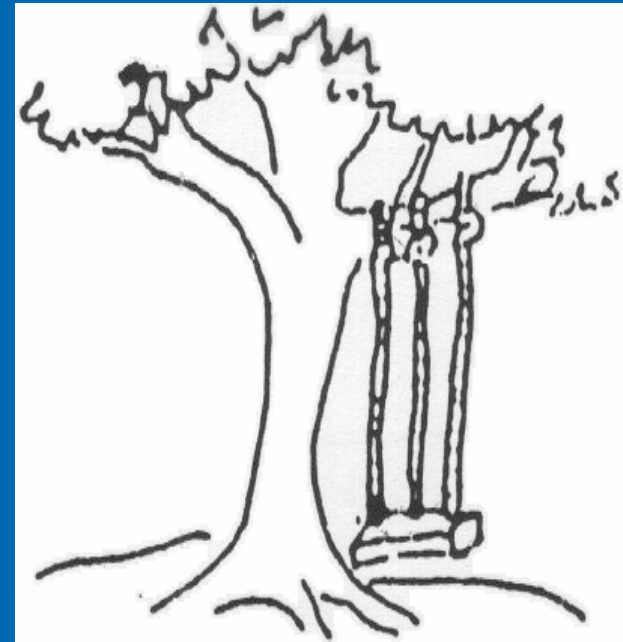


# Problem with Adaptation

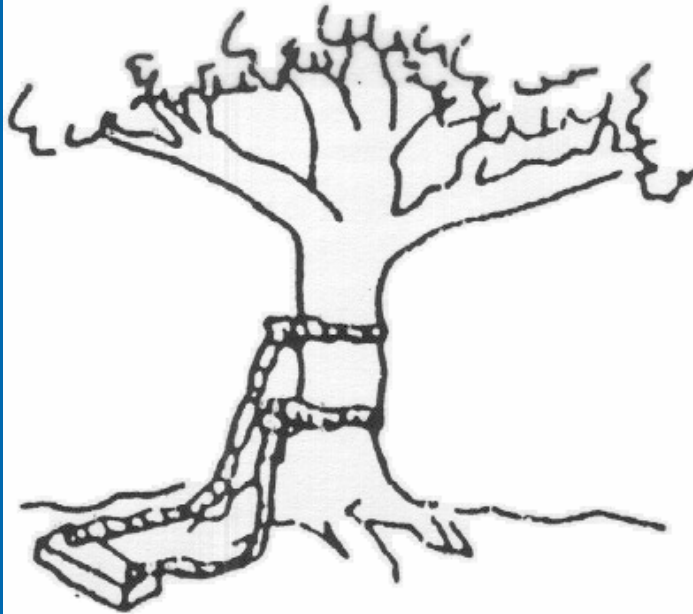
- Adaptation could result in losing the components that made the original program successful.
- Changes in a science-based program may dilute or even dissipate its effectiveness
- What are the boundaries? How much can a program be adapted without losing fidelity?



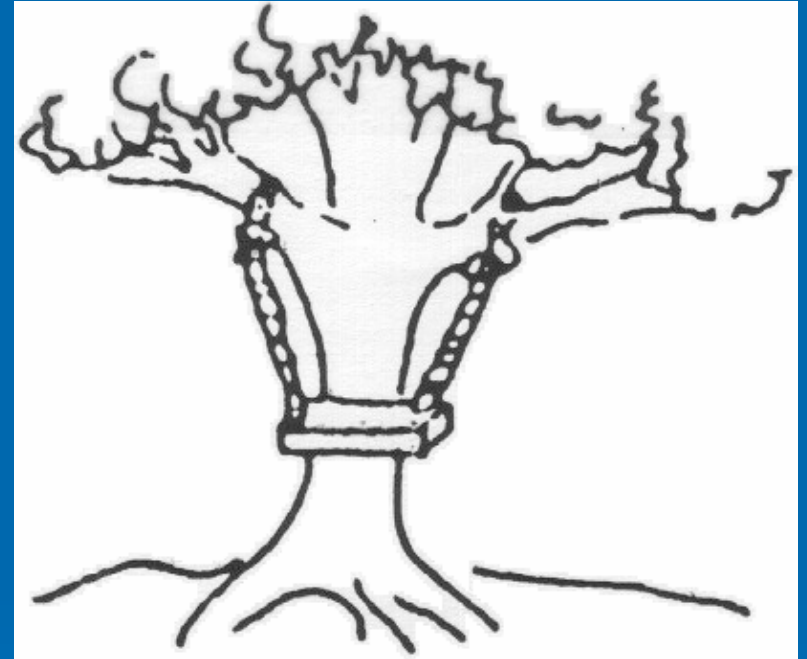
AS CONCEPTUALIZED BY  
THE EXECUTIVE DIRECTOR



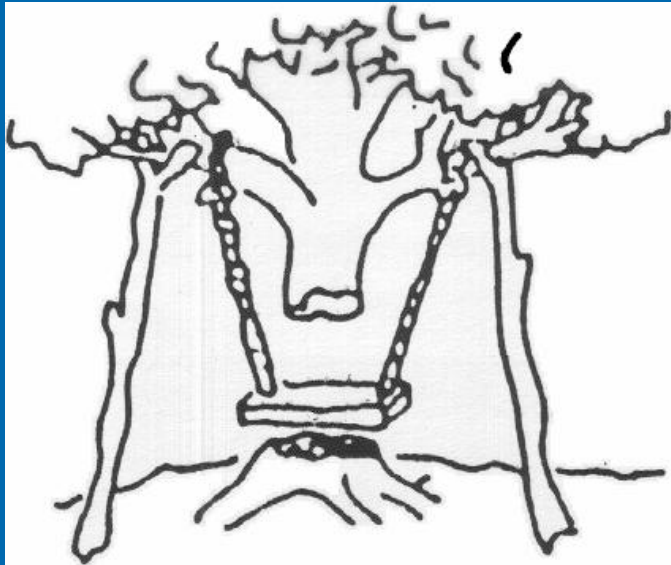
AS SPECIFIED IN  
THE GRANT PROPOSAL



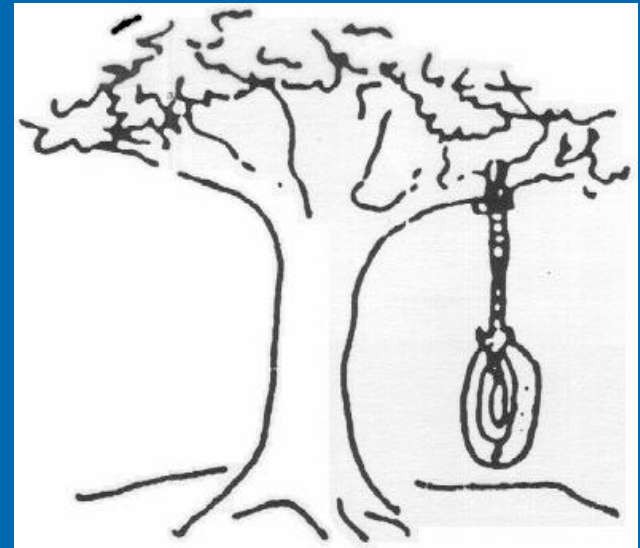
AS DESIGNED BY  
THE PROGRAM  
MANAGER



AS PRODUCED BY  
THE STAFF



AS INSTALLED AT  
THE USER SITE



WHAT THE USER WANTED

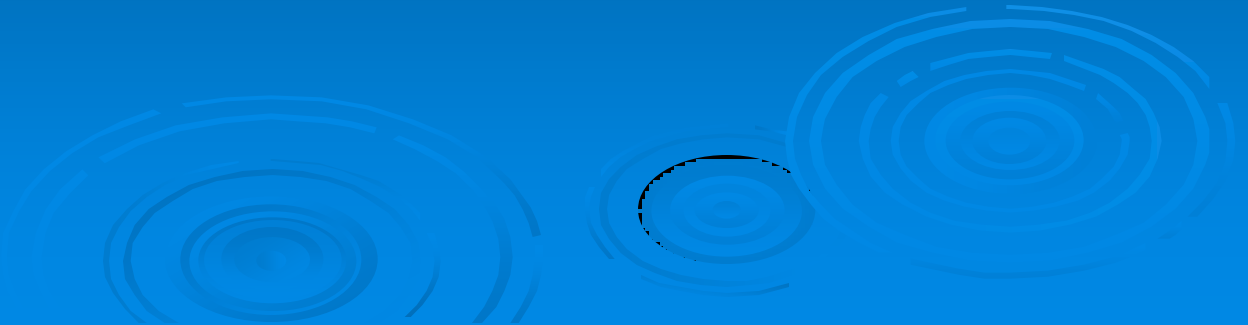
# Why Assess Fidelity?

- Important for both research/evaluation
- Important for management/administration
- Increasing need to identify and implement evidence-based practices



# Why Assess Fidelity?

- Measuring natural variation in multi-site studies
- Determining the degree of acceptable adaptation
- Measuring program drift in comparison groups
- Determining readiness for scaling up



# Domains of Fidelity

- Participant characteristics
- Staff characteristics
- Staff training
- Materials
- Procedures - curriculum
- Setting
- Dosage
- Evaluation – data collection



# Sources of Fidelity Data

- Observation – live or recorded
- Self-report from practitioners
- Participant/program records
- Participant/consumer reports



# Recommendations for Evaluators

- You must measure implementation as part of understanding program effectiveness.
- Different components may be related to outcomes.
- Consider implementation as a valid outcome, not just an independent variable.
- Fidelity checks are not the same thing as implementation research/evaluation.




# Exercise

Pretend you want to evaluate program fidelity for a mentoring group for young men to prevent sexual violence. It has a 12-week curriculum & is delivered by an adult male.

What are key considerations?

# Noonan, Emshoff, et al. 2009

As programs are transported to new settings:

1. What individual, organizational, institutional characteristics are associated with the adoption of evidence-based programs?
    - *If you build it, who comes and why?*
  2. What factors influence implementation with fidelity to the original model?
    - *Once it is built, is it used as intended?*
- 

# Measuring Fidelity

## Three steps in creating fidelity instrument

Step 1: identify core components and specifying ideal levels of implementation and gradations

Step 2: develop measures and collect data

Step 3: examine the instrument's reliability and validity

Summative fidelity score vs. multiple fidelity dimensions



# Quantitative Fidelity Results

## Means and Standard Deviations for Fidelity Dimensions, by Program

| <i>Fidelity Dimensions</i>              | <i>Mean (SD)<br/>Combined</i> | <i>Mean (SD)<br/>MOST Clubs</i> | <i>Mean (SD)<br/>Expect Respect</i> |
|---|-------------------------------|---------------------------------|-------------------------------------|
| Staff                                   | .69 (.20)                     | .78 (.13)                       | .66 (.21)                           |
| Recruitment & Referral                  | .61 (.28)                     | .61 (.28)                       | .61 (.28)                           |
| Evaluation                              | .58 (.48)                     | .63 (.44)                       | .56 (.50)                           |
| School Relationship                     | .57 (.40)                     | .90 (.17)                       | .43 (.38)                           |
| Program Content & Delivery              | .66 (.17)                     | .55 (.06)                       | .71 (.17)                           |
| Curriculum & Materials<br>Sub-dimension | .51 (.32)                     | .50 (.33)                       | .51 (.32)                           |
| Procedure & Process Sub-<br>dimension   | .73 (.19)                     | .57 (.12)                       | .81 (.17)                           |
| <b>Sample Size</b>                      | 21                            | 6                               | 15                                  |

Note: Fidelity scores ranged from +1 (high fidelity) to -1 (low fidelity)

# Recommendations for Evaluators

1. Evaluate the effectiveness of dissemination strategies
2. Consider the adoption of programs as an evaluation outcome (or process variable)
3. Evaluate capacity building and TA
4. Assess implementation
  - As an outcome
  - As a moderator of outcomes
  - As an independent variable in multi-site studies

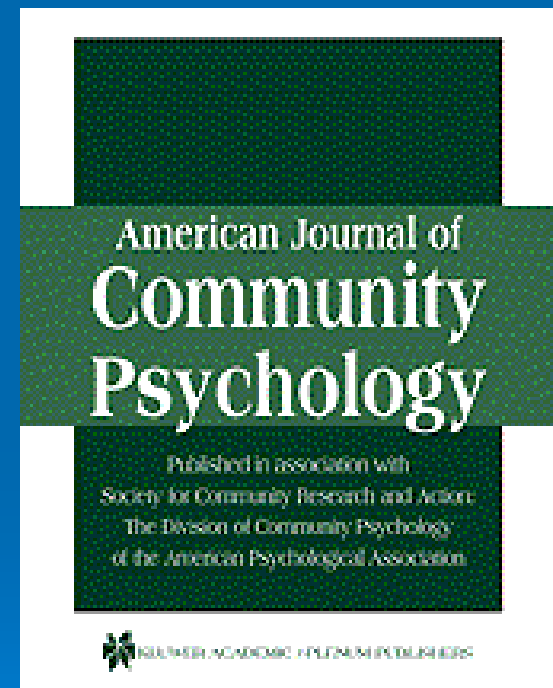




# Read More...

Special Issue, June 2008 & 2012

Collections illuminate  
CDC's ISF  
framework



# *For your reading pleasure...*

1. “Knowledge Utilization, Implementation, Transfer, and Translation: Implications for Evaluation.” *New Directions for Evaluation* – Winter, 2009
2. “Adoption, Adaptation, and Implementation of Sexual Assault Prevention Programs.” Noonan, Emshoff, et al. *Health Promotion Practice*, 2009.

## **SPECIAL ISSUE OF *RESEARCH ON SOCIAL WORK PRACTICE*, 2009:**

3. “Critical Measurement Issues in Translational Research”, Russell E. Glasgow.
4. “Applying Diffusion of Innovation Theory to Intervention Development.” James W. Dearing.
5. “Research Dissemination and Diffusion Translation Within Science and Society.” Jon F. Kerner & Kara L. Hall.
6. “Core Implementation Components” Dean L. Fixsen et al.

# For more information

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770-488-1532

\* Ask me to send you articles!

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