

Dissemination and Implementation Evaluation Research

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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.

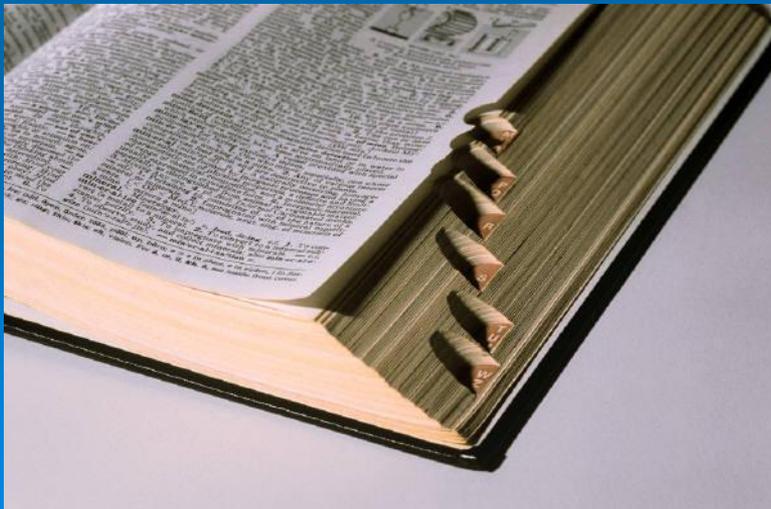
It's a Simple Question -

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...

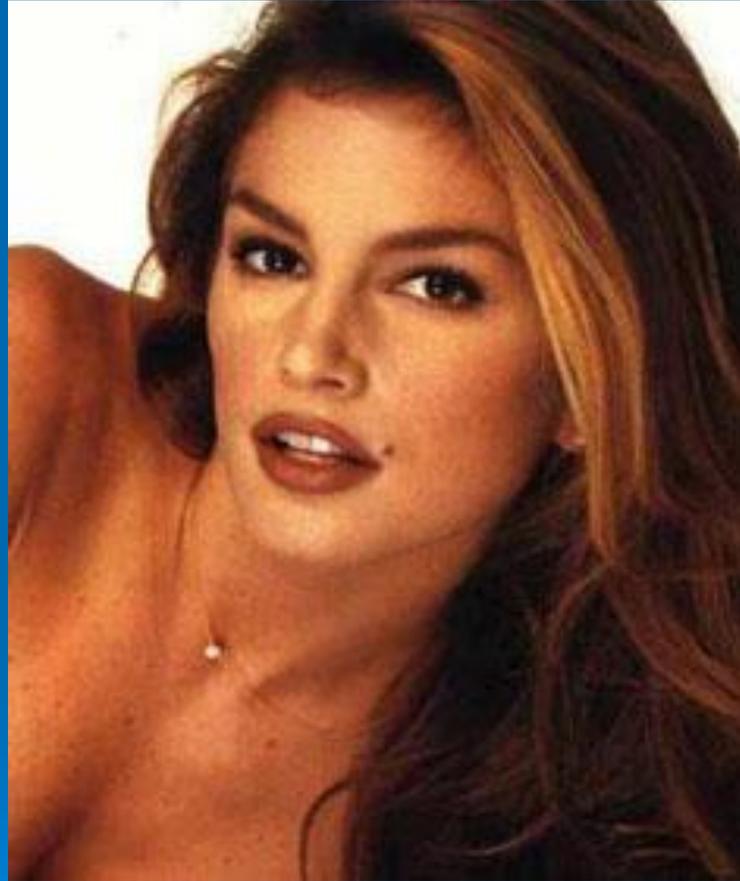


Oprah, George, Plastic Surgery



Jennifer Anniston

What I looked like in 1995...

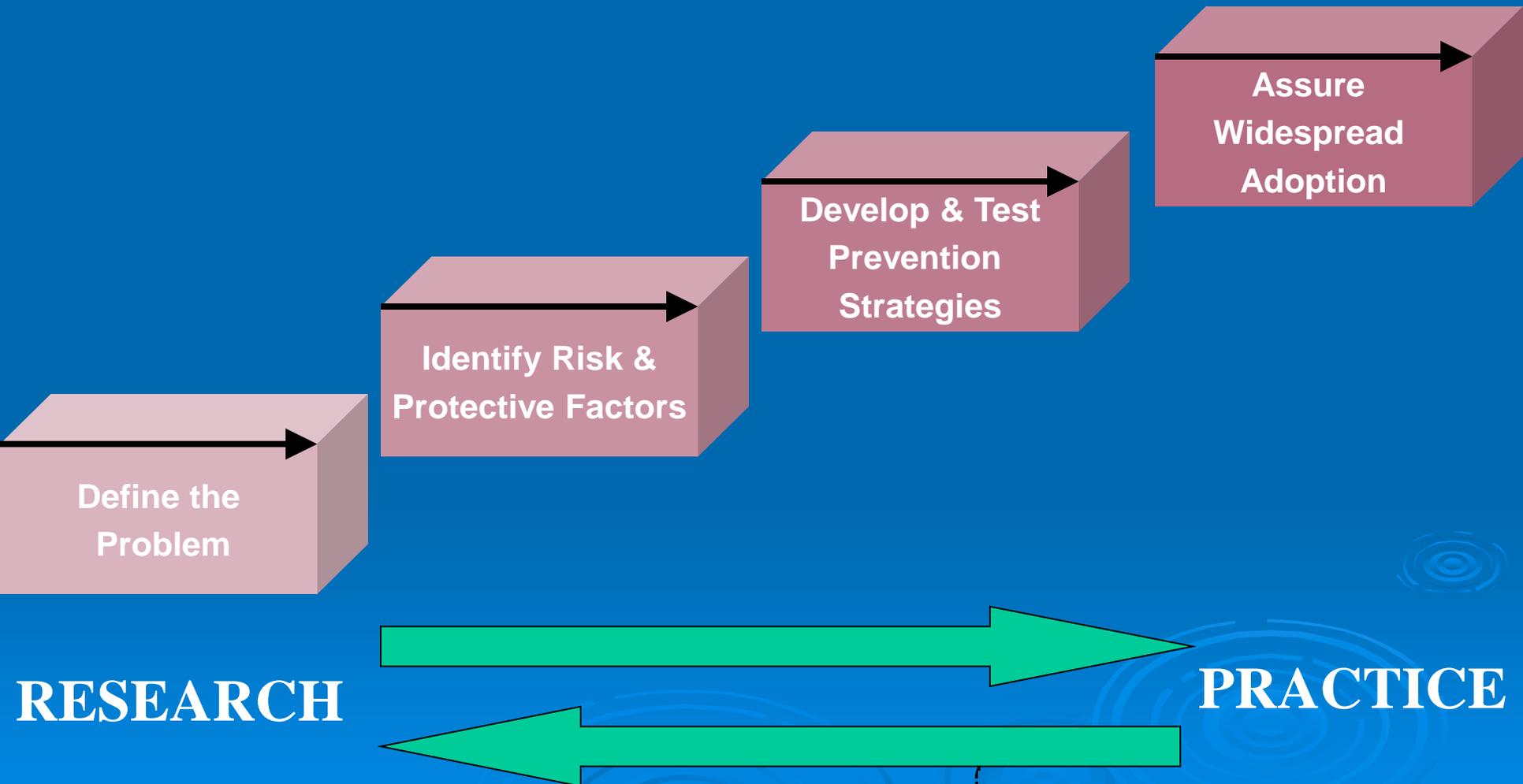


Rita K. Noonan

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 MCA/Universal Company Production • A Phil Alden Robinson Film "Field of Dreams"
KEVIN COSTNER • AND MADGAN • JAMES EARL JONES • RAY LIOTTA • BURT LANCASTER "BASED ON THE BOOK 'SHOLES' BY W.P. KINSSELLA
MUSIC BY JAMES HURN • DIRECTOR OF PHOTOGRAPHY JOHN LINCOLN • PRODUCTION DESIGNER DENNIS GARNER • EXECUTIVE PRODUCER BYRON FRANKEL
PRODUCED BY LAWRENCE GOELSON AND CHARLES GOELSON • WRITTEN FOR THE SCREEN AND DIRECTED BY PHIL ALDEN ROBINSON

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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

Existing Research and Theory

Policy

Climate



Interactive Systems Framework

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Putting It Into Practice—Prevention Delivery System

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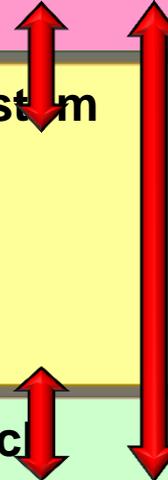
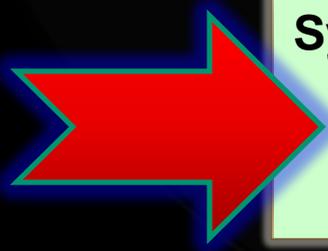
Synthesis

Translation

Existing Research and Theory

Policy

Climate



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:

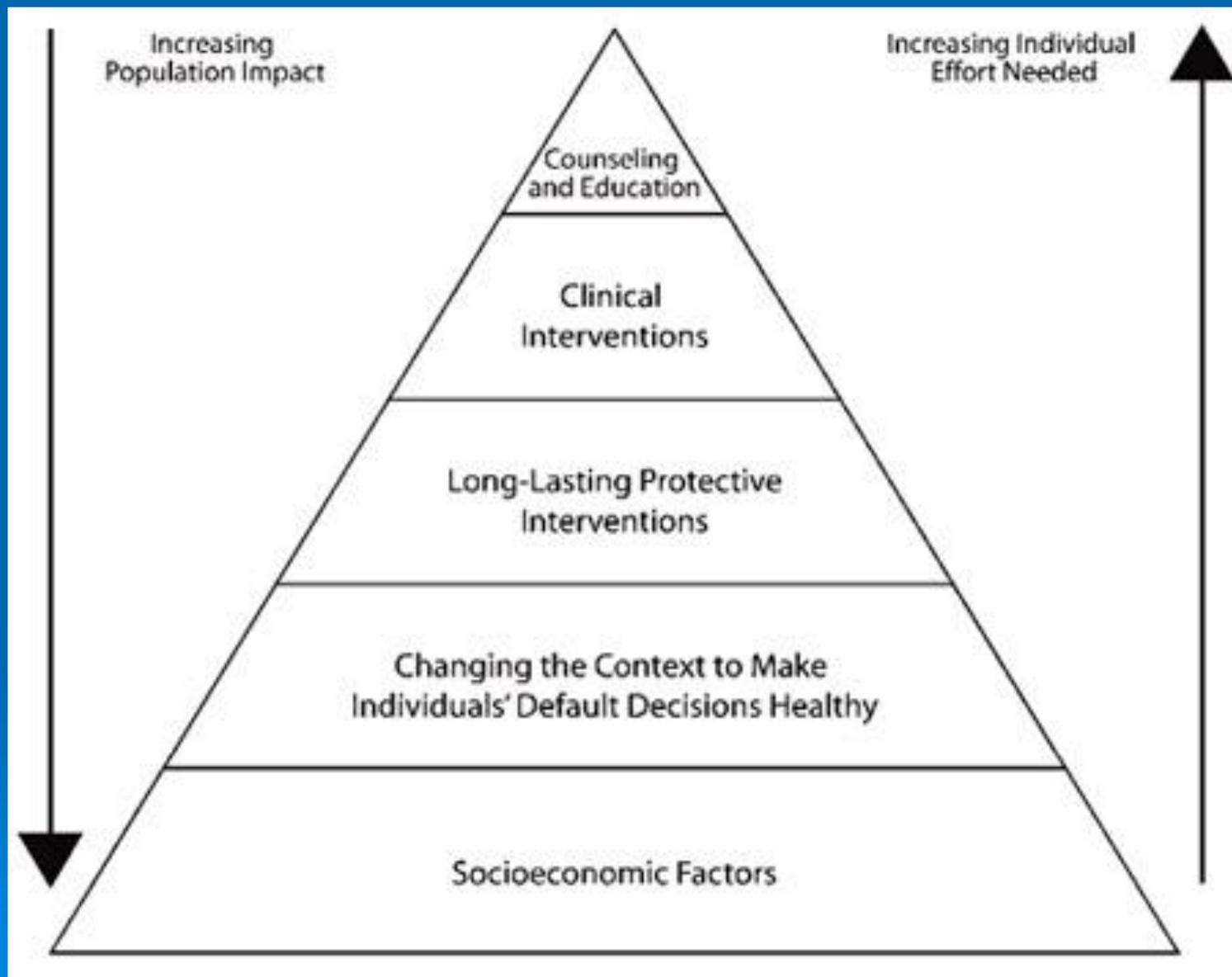
“Is it scalable?”

“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:

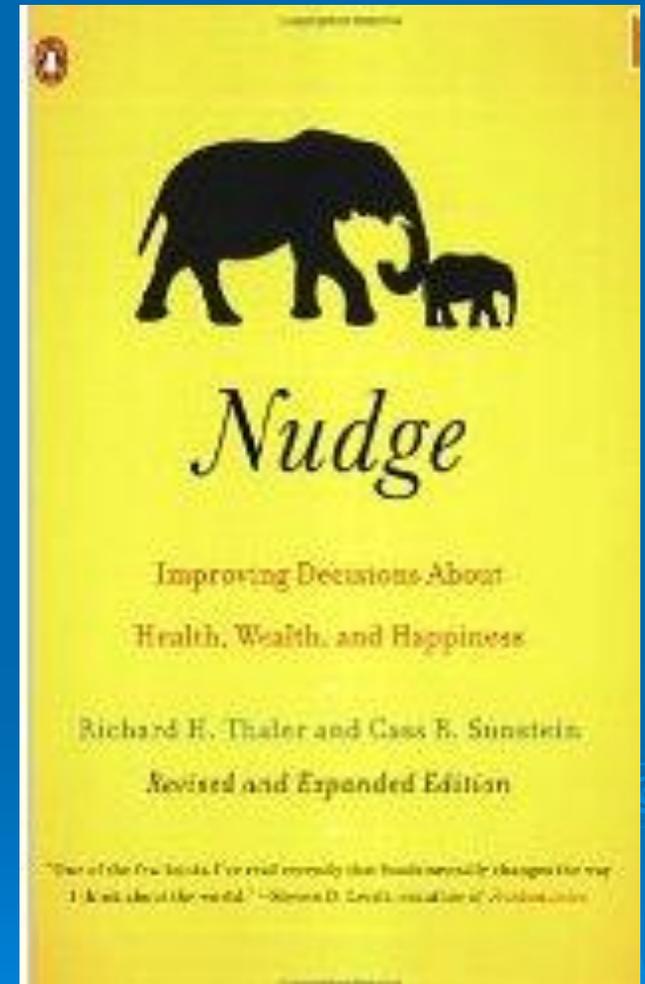
Healthy Defaults

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

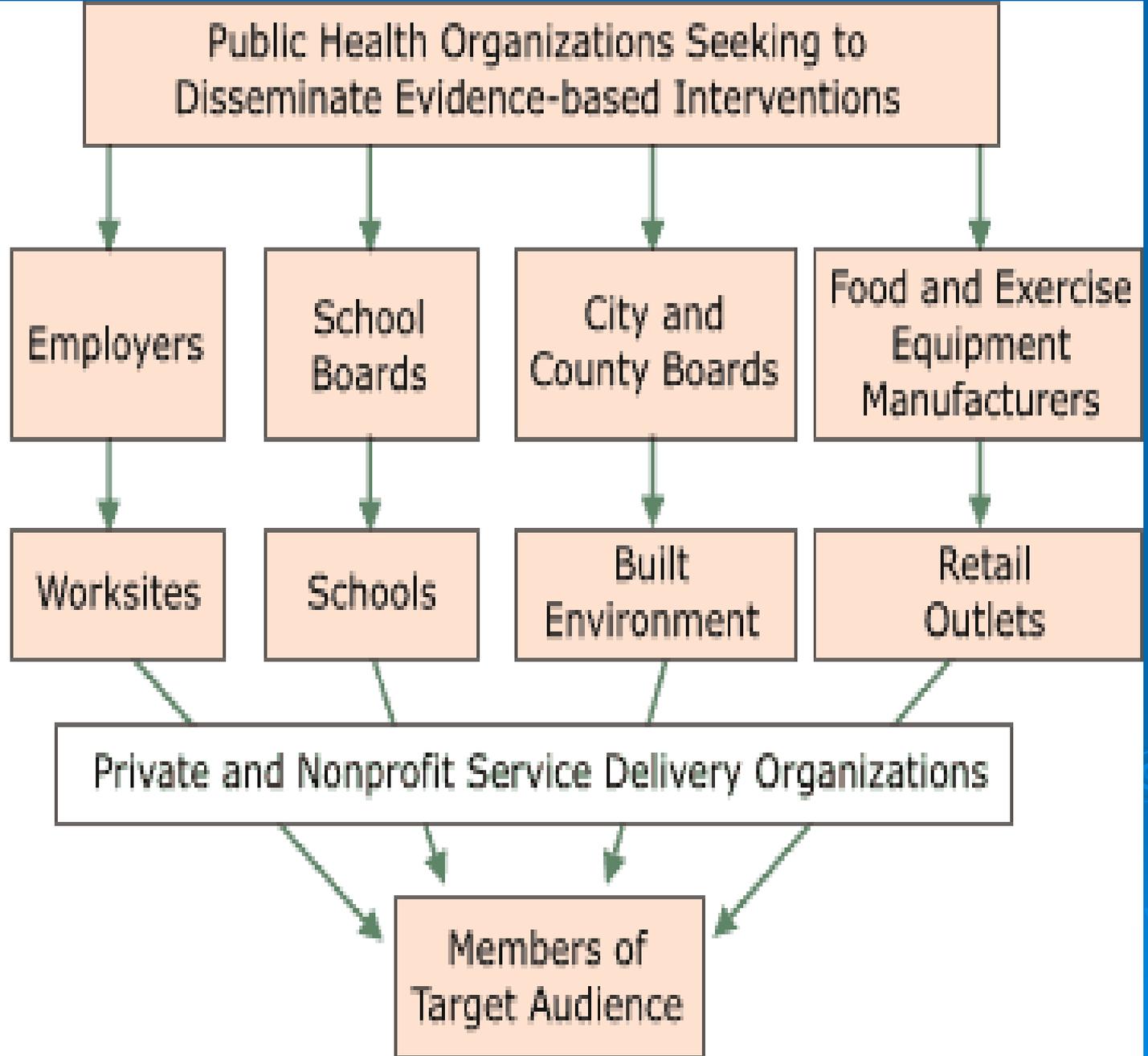
Retail
Outlets

**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 features the word "STEADI" in a bold, blue, sans-serif font. The letter "I" is replaced by a white silhouette of an elderly person's head and shoulders, facing right. The silhouette is filled with a pattern of small white dots, suggesting a brain scan or a focus on cognitive health.

**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

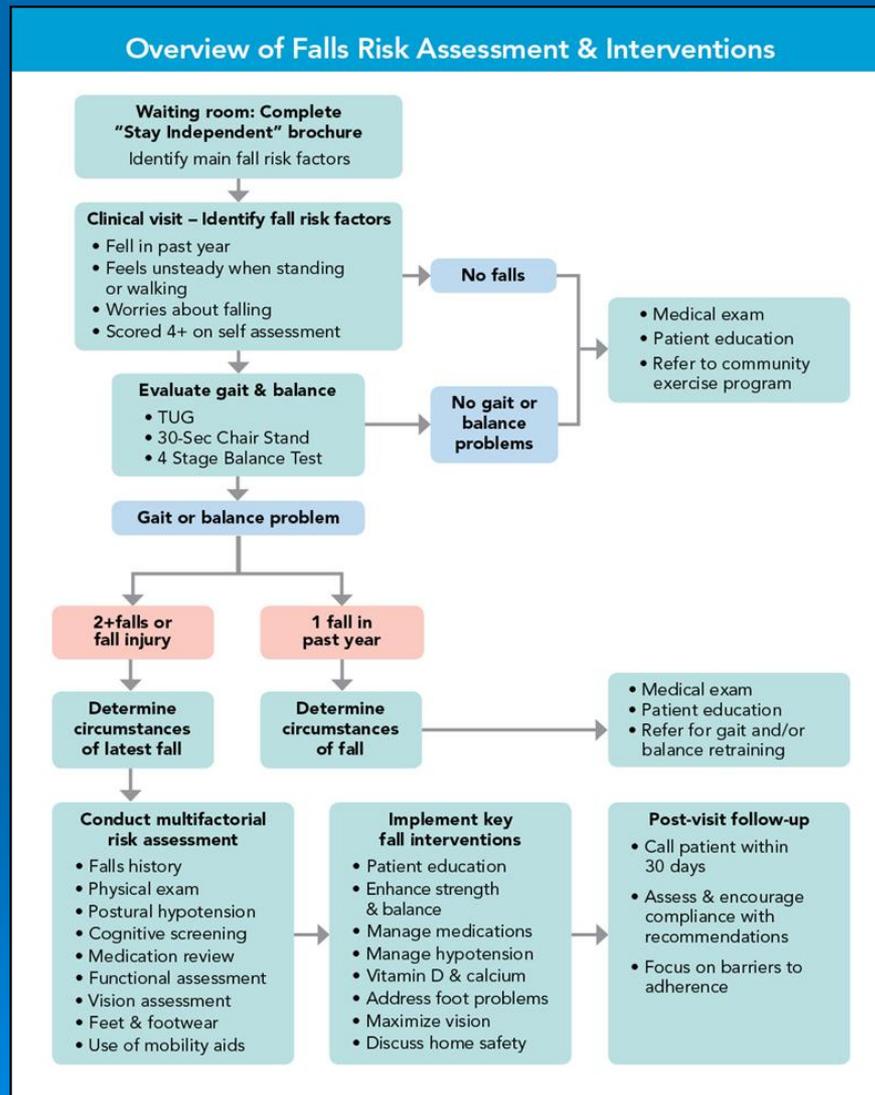
Physician assistants



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 with a physical exam to improve balance and strength.
2. Ask your doctor to review your medications to see if any could increase your risk of falling.
3. Get an updated vision exam.
4. Make sure you have proper footwear.
 - ▶ Re-train your feet to wear proper shoes.
 - ▶ Put on your shoes before you get out of bed.
 - ▶ Have your shoes checked for proper fit.



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 Risk Factor for Your Patients



- One-third of people 65 and older fall each year.
- Less than half of the Medicare beneficiaries in the previous year talked to their health care 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 \$10 billion annually. Hospital costs account for two-thirds of the total.

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

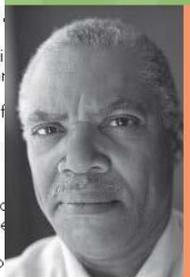
For more information, go to: www.cdc.gov/injury



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STEADI

Medications Linked to Falls



Although many medication classes have been linked to falls, the evidence is strongest for these 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 or reduce:

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

There is a full searchable list of the potential fall risk medications and medication classes listed at www.cdc.gov/injury/STeADI.

For more information about medications, go to: www.cdc.gov/injury/STeADI



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STEADI Stopping Elderly Accidents, Deaths & Injuries

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



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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 a 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.

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 in the full standing position in 30 seconds.

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

Record the number of times the patient stands in the full standing position.

Number: _____ **Rating (See chart)** _____

A below average rating indicates a high risk for falling.

Notes:



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Instructions for Measuring Orthostatic Blood Pressure

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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 ≥ 20 mm Hg or experiencing symptoms of lightheadedness or dizziness is considered abnormal.

Position		Time	BP	Associated Symptoms
Lying Down		5 Minutes	BP ____ / ____ HR ____ / ____	
Standing		1 Minutes	BP ____ / ____ HR ____ / ____	
Standing		3 Minutes	BP ____ / ____ 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 the clinic for a wellness visit.

History

When asked, Mrs. Booker reports she fell while walking in her neighborhood. She feels steady when going, and she tripped over a crack in the sidewalk.

Mrs. Booker reports that she usually walks with a friend, they were talking and she was going out of doors. She tries to avoid potholes and cracks in the sidewalk so she won't trip. She reports 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 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.

CASE STUDY 2

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

History Of Current Problem

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

Mr. Ying cannot identify any recent changes in his routine that would explain his symptoms, and he experiences dizziness at different times of the day and evening. He denies experiencing syncope, and his dizziness is accompanied by his dizziness.

Mr. Ying also remarks that, independent of his symptoms, he feels unsteady on his feet when walking. His son reports that he 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 in a nursing home. He's fearful about falling and becoming a burden on his son.

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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Talking with Patients Based on Stages of Change

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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 Does not believe in or downplays personal susceptibility 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 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
The patient is considering the possibility that he or she may be at risk of falling. Goal: Patient will examine benefits and barriers to change.	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. 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.
	I don't want to ask my daughter to drive me to the exercise class. Getting to the senior center is so hard now that I don't drive. I have to take care of my husband. I don't have time for this.	There are quite a few simple exercises* you can do to keep yourself from falling. 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.

* 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.

Fall Risk Checklist

Patient: _____ Date: _____ Time: _____ AM/PM

Fall Risk Factor Identified	Factor Present?	Notes
Falls History		
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	
Medical Conditions		
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	
Medications		
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	
Gait, Balance & Strength		
Timed Up and Go (TUG) Test >14 seconds	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4-Stage Balance Test Full tandem stance <10 seconds	<input type="checkbox"/> Yes <input type="checkbox"/> No	
30-Second Chair Stand Test Below average score (See table on back)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Vision		
Acuity <20/40 OR no eye exam in >1 year	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Postural Hypotension		
A decrease in systolic BP ≥ 20 mm Hg or a diastolic bp of ≥ 10 mm Hg or lightheadedness or dizziness from lying to standing?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Other Risk Factors (Specify)		
	<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 (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.



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

STEADI Stopping Elderly
Accidents, Deaths & Injuries

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



Steps for Fall Prevention

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

Identify & address fall risk factors:

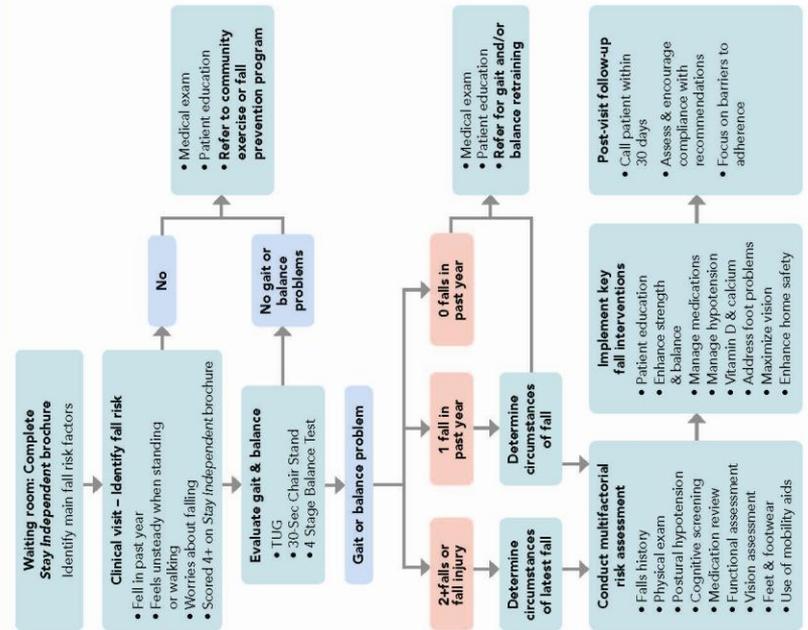
- Lower body weakness
- Gait and balance problems
- Psychoactive medications
- Postural dizziness
- Hearing or vision problems with feet and/or shoes
- Home safety
- Referral as needed to specialists or community programs.
- Follow-up with patient within 30 days.

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



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

STEADI Stopping Elderly Accidents, Deaths & Injuries

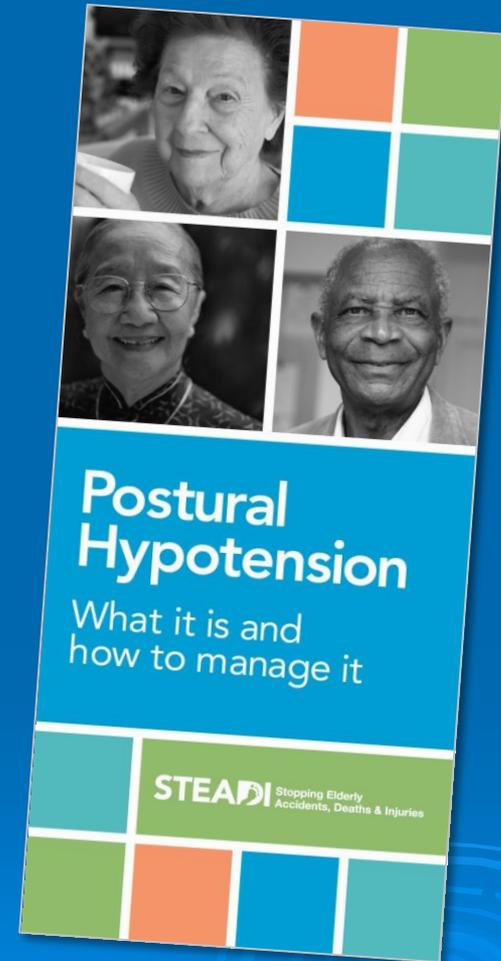
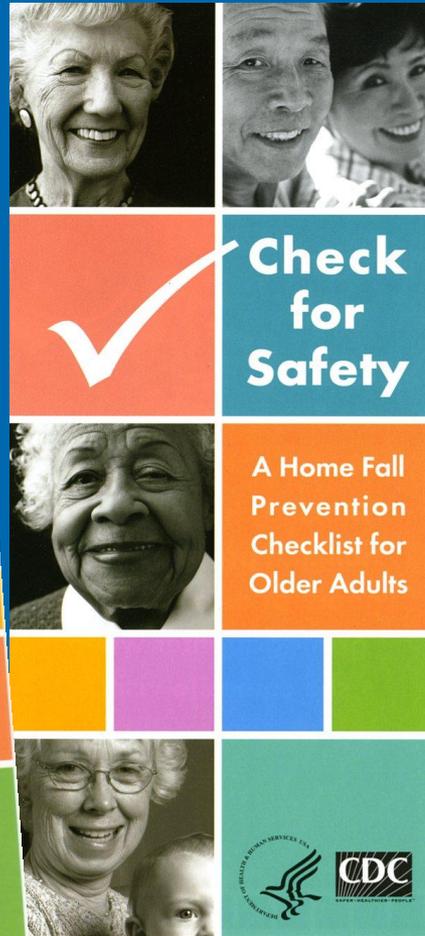
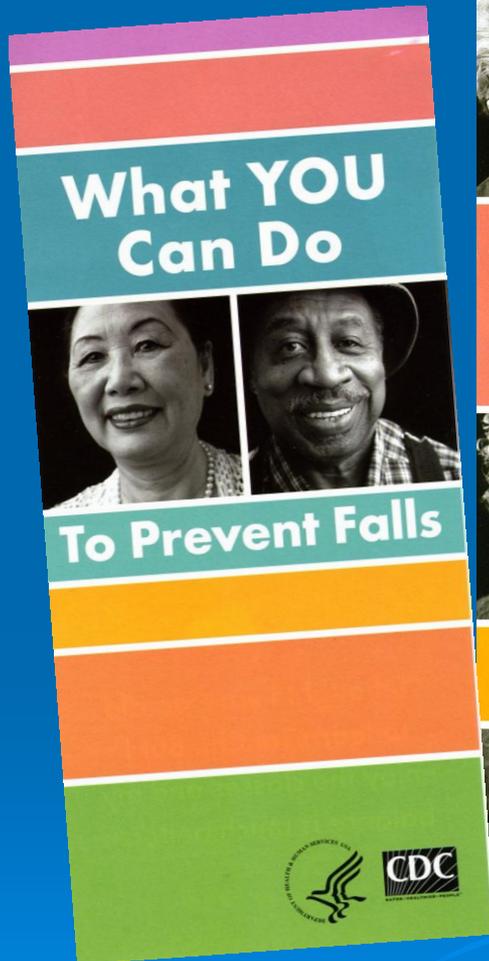
Wall Chart

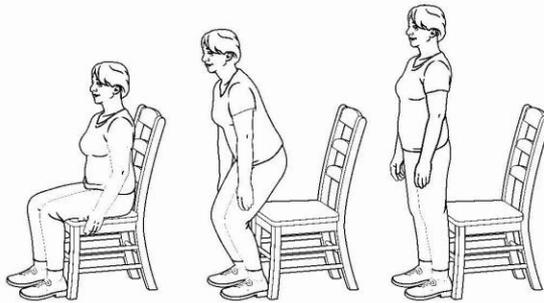
Integrating fall risk reduction into clinical practice

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

STEADI

Stopping Elderly
Accidents, Deaths & Injuries

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

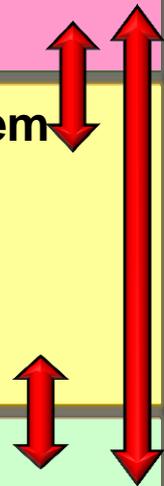
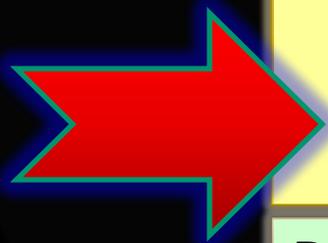
Synthesis

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

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

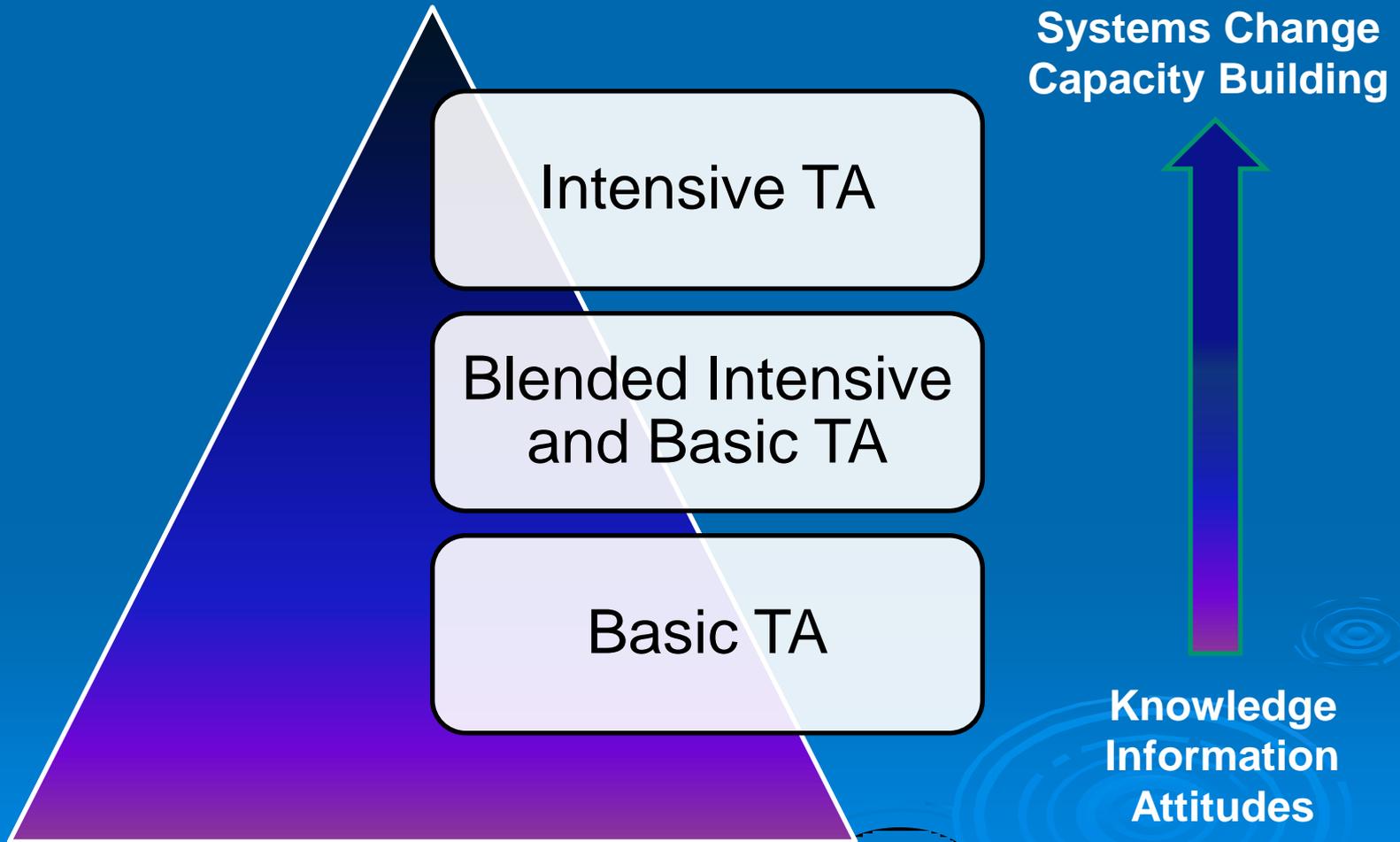
“Making it Happen!”

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

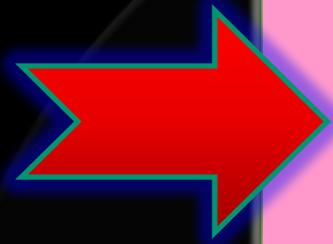
Innovation-Specific Capacity Building

Distilling the Information—Prevention Research System

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Translation

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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?

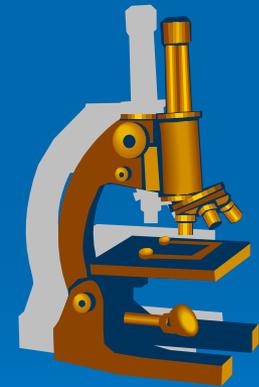
What are the characteristics of organizations that are high or low adopters?

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:

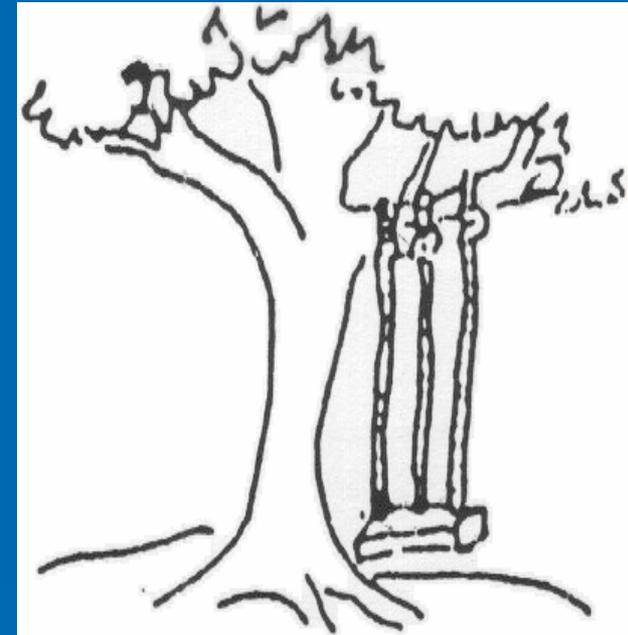
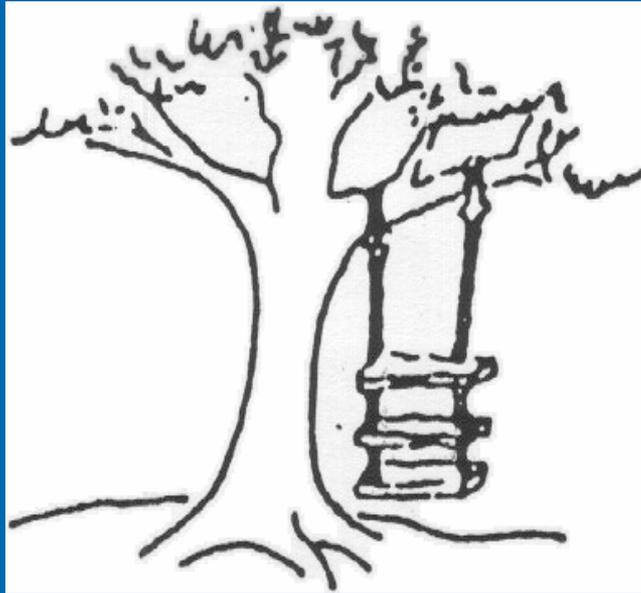
- Culture
- Needs
- Resources
- History
- Norms
- Values
- Assets

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

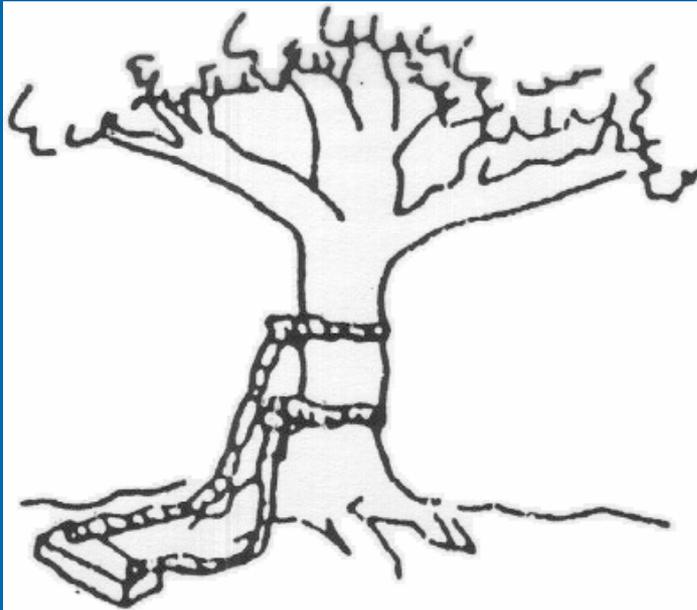
Problem with Adaptation

- 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?

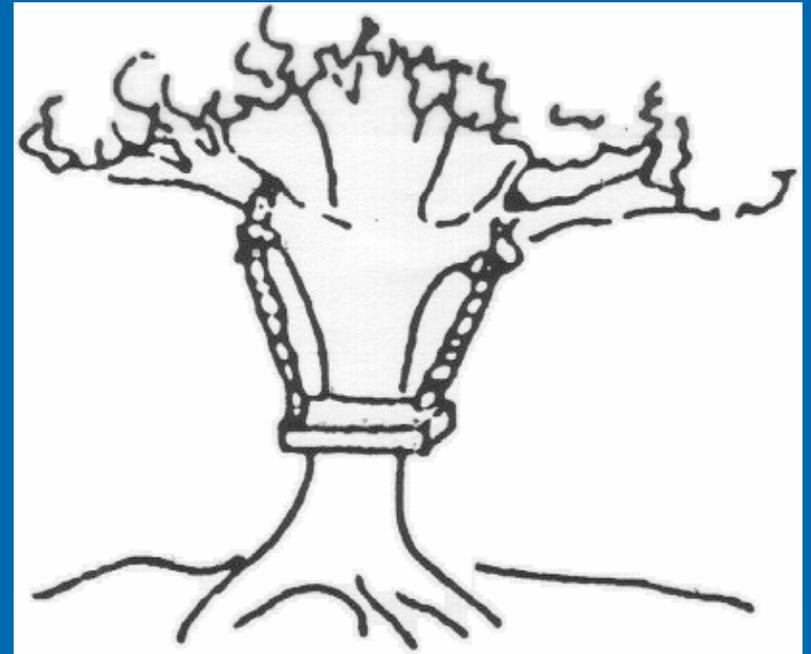


AS CONCEPTUALIZED BY
THE EXECUTIVE DIRECTOR

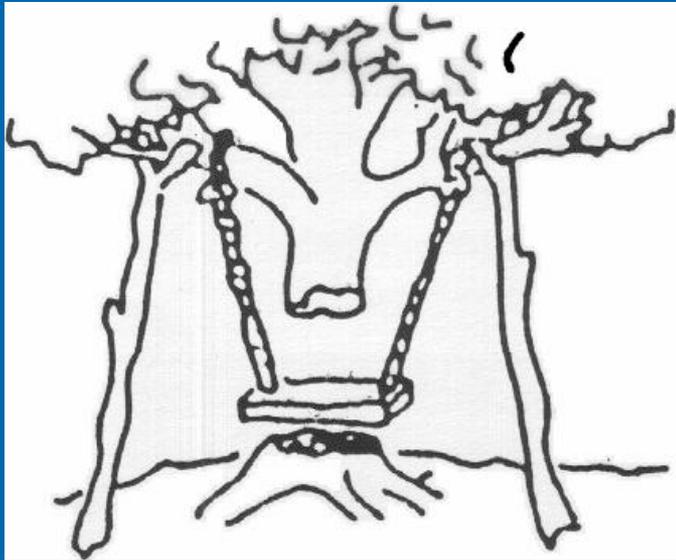
AS SPECIFIED IN
THE GRANT PROPOSAL



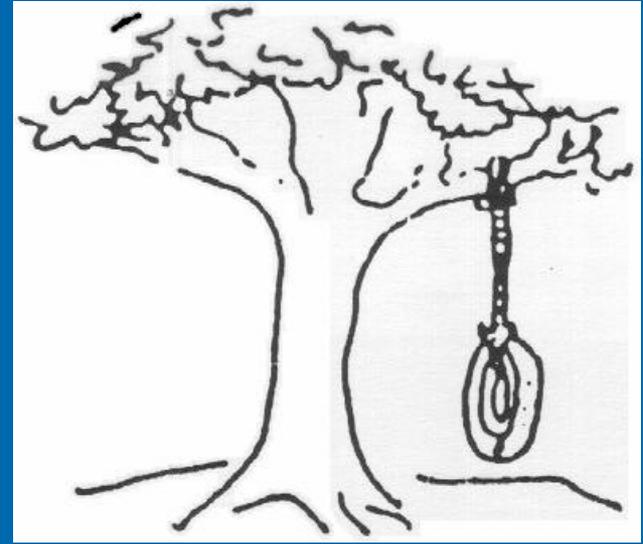
AS DESIGNED BY
THE PROGRAM
MANAGER



AS PRODUCED BY
THE STAFF



AS INSTALLED AT
THE USER SITE



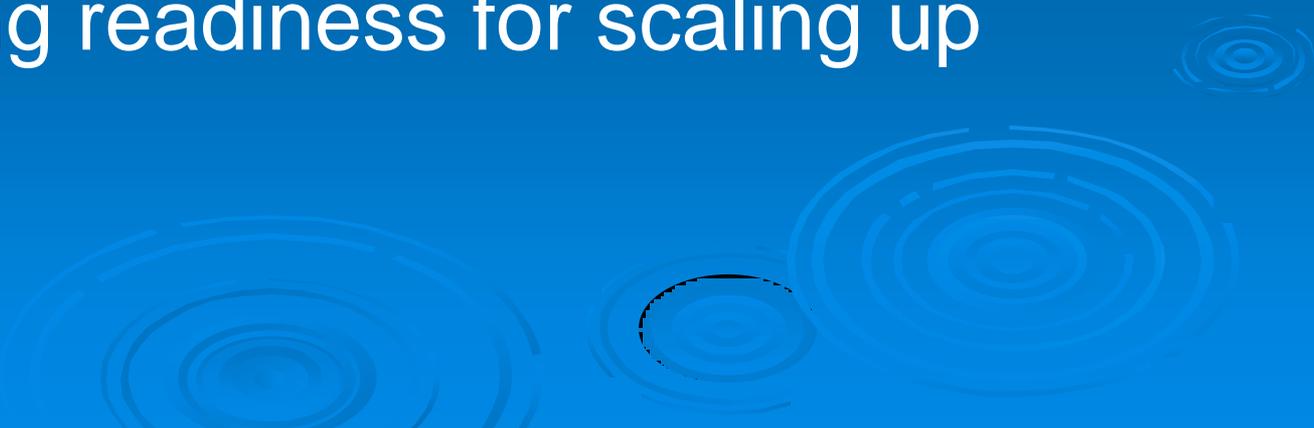
WHAT THE USER WANTED

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) Combined</i>	<i>Mean (SD) MOST Clubs</i>	<i>Mean (SD) 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 Sub-dimension	.51 (.32)	.50 (.33)	.51 (.32)
Procedure & Process Sub- dimension	.73 (.19)	.57 (.12)	.81 (.17)
Sample Size	21	6	15

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

Recommendations for Evaluators

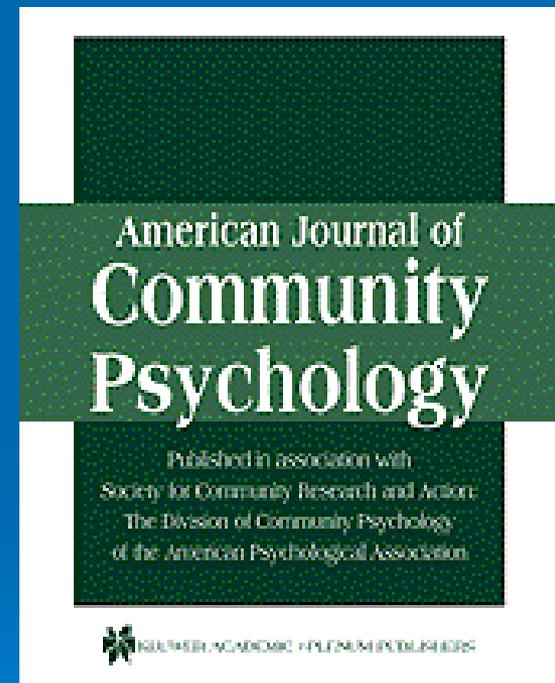
1. Evaluate the effectiveness of dissemination strategies
2. Consider the adoption of programs as an evaluation outcome (or process variable)
3. Evaluate capacity building and TA
4. Assess implementation
 - As an outcome
 - As a moderator of outcomes
 - As an independent variable in multi-site studies



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!