

# Fresno Weatherization Plus Health Pilot Program



DOE Weatherization Plus Health Conference  
November 17, 2011  
Leif Magnuson



# Fresno Area – 1.1 Million people



# Fresno County and Asthma



- 200,000 asthmatics
- 6,000 annual emergency room visits
- 1,100 annual hospitalizations
- Annual costs are \$87 million

Source: Impact Investing in Sources of Health: Value Model for Reducing Asthma in Fresno, CA  
Health Research for Action, UC Berkeley and Collective Health, Executive Summary

# Partners

- Fresno County Employment Opportunity Commission – Wx Provider
- Clinica Sierra Vista
- Centro La Familia
- West Fresno Health Care Coalition
- Fresno Interdenominational Refugee Ministries (FIRM)
- City of Fresno
- Fresno County
- City of Clovis



City of Clovis



# Fresno Implementation Plan

- A. Develop **Partnership Principles (goals)** - Done
- B. Develop **Mission Statement** - Done
- C. Develop **Project Brochure** – In Draft
- D. Develop **DropBox site** for internal review of project documents - **Done**
- E. Develop **Workgroups** - **Done**
  - Coordination/communication, internal training, outreach/education, funding
- F. Develop **Program Workplan** – In Draft
  - Roles and responsibilities: Table showing tasks/activities, responsible persons and due dates
  - Procedures and paperwork
- G. Develop **Group Charter** – In Draft
  - Delineate member contributions
  - Confirms management and staff buy-in from each member organization
- H. Develop **Website for the public** - TBD
- I. Develop **Funding Proposal** - TBD
- J. **Implement the Pilot** - TBD

# Fresno Partnership Principles/Goals

- Create One touch/one stop program
- Fix all weatherization and health problems at one time
- Leverage/pool resources
- Bring together variety of skills and knowledge to provide comprehensive quality work
- Raise program awareness among public, governments and other organizations
- Raise awareness of what a Healthy Home means
- Ensure that Health and Safety needs are paramount. H&S should trump all other activities done in the home
- Ensure that energy efficiency goes hand-in-hand with Health and Safety. Cannot do efficiency alone
- Understand and manage insurance/liability issues

# Fresno Mission Statement

*To ensure the health and safety of low-income families,  
particularly the elderly, people with disabilities, and children,  
while reducing their energy costs*

## Energy Retrofit

## Health Assessment

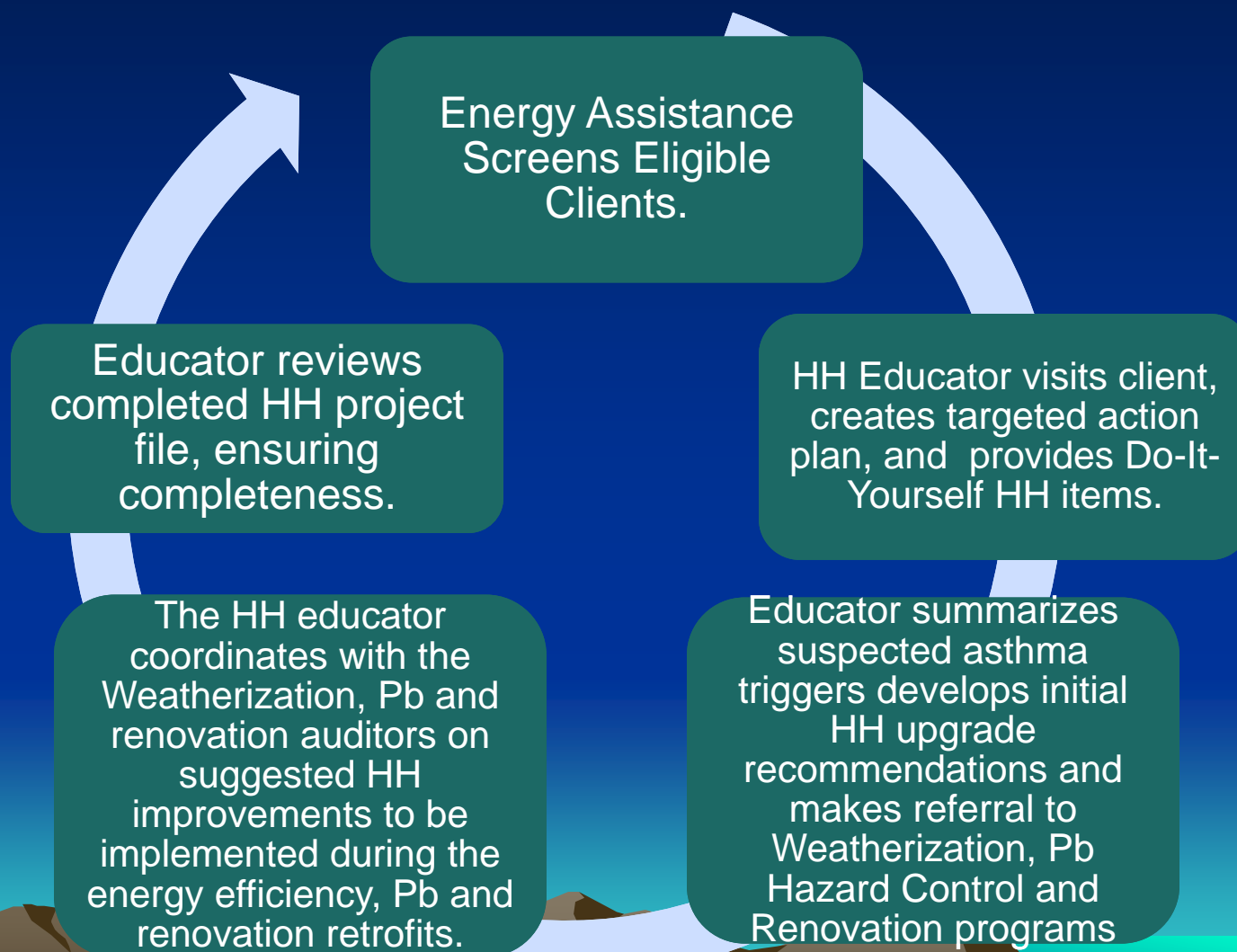
- ❖ Insulation
- ❖ Air Sealing
- ❖ HVAC Upgrade/Tune-up
- ❖ Window replacement
- ❖ New water heater
- ❖ New appliances
- ❖ New lighting

- ✓ Duct Work
- ✓ Appliance Venting
- ✓ Combustion Safety Testing
- ✓ Ventilation
  - ✓ Kitchen fan
  - ✓ Bathroom fan
  - ✓ Whole house
- ✓ Air filtration
- ✓ Air distribution
- ✓ Seal Garage from house
- ✓ Dampness/mold prevention
- ✓ Repair leaks
- ✓ Prevent pest entry
- ✓ Prevent radon exposure
- ✓ Asbestos removal
- ✓ Lead and dust

- Cleaning/Vacuuming
- Bed/Pillow Covers
- Walk off mats
- Carpet removal
- Isolation from Pets
- Reducing chemical exposure from cleaning products, pesticides, hobbies
- Selecting safe air purifiers
- Develop Medical Home

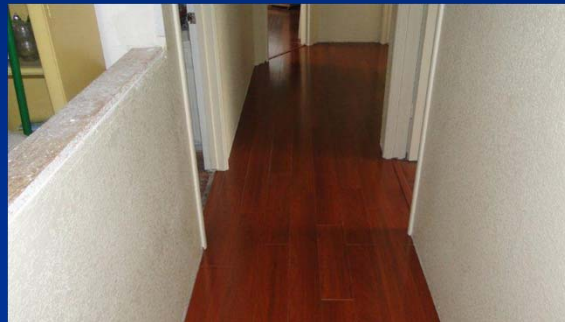


# Education & Weatherization Coordination



Modified From: John Davies, BPC Opportunity Council, Bellingham, WA

# Clovis Mobile Home Renovation



# Process Summary Overview

- Herding and Hoarding
- People and Principles
- Roles and Responsibilities
- Procedures and Paperwork
- Metrics and Monitoring
- Launch and Laude
- Funding and Future



## Example: Asthma Mitigation in Fresno

### 1. identify

#### Target Population

1,100 children with asthma emergencies related to home-based environmental triggers

#### Savings Opportunity

\$17.1 million (medical costs pre-intervention)  
- \$10.8 million (medical costs *post-intervention*)  
= **\$6.3 million opportunity** (37% savings)

#### Financial Stakeholders

1. Medi-Cal: **\$3 mil.** projected savings
2. Employers: **\$2.3 mil.** projected savings
3. HC Providers: **\$1 mil.** projected savings

### 2. invest

#### Health Capital Markets<sup>SM</sup>

Investment vehicle selected and structured:  
**Health Impact Bond<sup>SM</sup>**

#### Bond Term Sheet

- **\$1.1 million capital required**
- 18 months; 20% return
- Obligation to pay: financial stakeholders ("borrowers")

#### Bond Investors

- High net worth/social impact investors
- Institutional investors, foundations

**HealthSourcing<sup>SM</sup>**

### 4. return

#### Savings

Intervention generates **ongoing annual medical cost savings**

Medical Costs (millions)



#### Return

	Medi-Cal	Emplr.	HC	TOTAL	
18 months	\$3M 5.9:1 ROI	\$2.3M 5.9:1 ROI	\$1M 5.7:1 ROI	<b>\$6.3M</b> 5.9:1 ROI	Investors (\$1.1M + 20%) Financial stakeholders Reinvest in Fresno HCE
by 2015	\$4.6M 9.1:1 ROI	\$3.1M 7.9:1 ROI	\$1.1M 6.3:1 ROI	\$8.8M 8.2:1 ROI	

### 3. improve

#### Evidence-Based Intervention

**Home-based multi-trigger, multicomponent intervention with environmental focus** to reduce exposure to indoor asthma triggers (allergens and irritants)

\* studies/results reviewed by CDC task force

#### Program Providers

Local existing organizations and/or job creation

#### Validation

UC Berkeley School of Public Health



# Fresno Weatherization Plus Health Pilot Program



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# Next Steps

- Develop and Sign Charter
  - Summarizes Roles and Responsibilities
- Develop Procedures and Paperwork
- Develop Metrics and Monitoring plan
- Launch
- Apply for funding





# Impact Investing to Reduce Asthma in Fresno Key Stakeholders Review Meeting

November 29, 2011 (Noon–3:30pm)



51050 N. Woodrow Avenue  
West Complex 142 – Board Room  
Fresno, California 93740

## AGENDA

Noon – 1 pm

Welcome, Introductions and Lunch

***Maria Hernandez, PhD***

Senior Advisor, Third Sector Health Innovations  
UC Berkeley Health Research for Action Center

***Rick Brush***

Founder, Collective Health

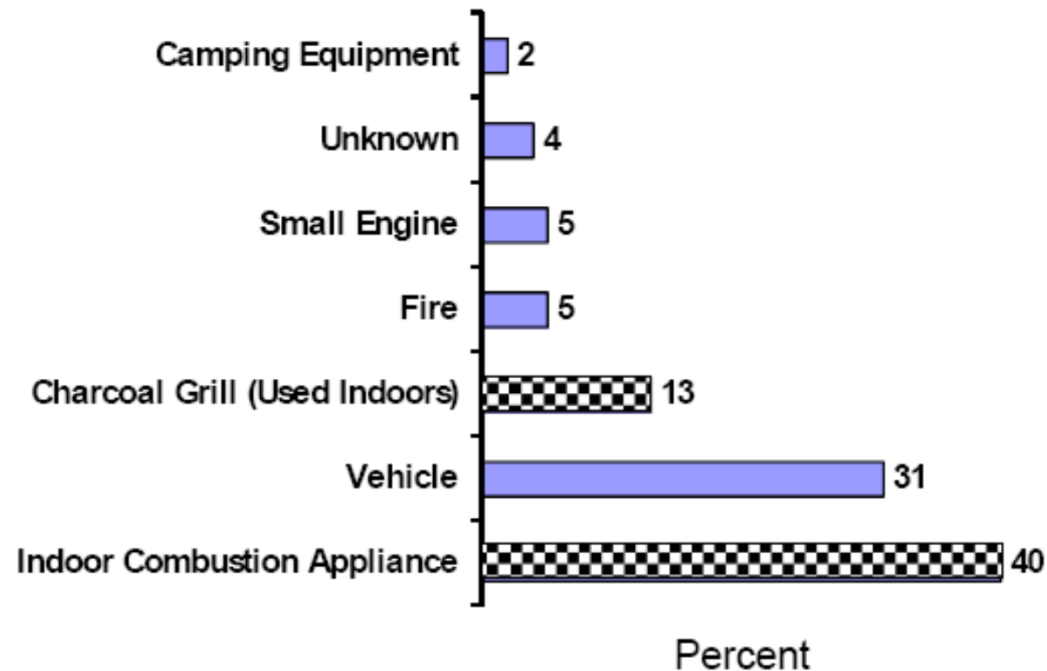
# Estimated Deaths from Indoor Air exposure in CA

End Point	Avg. Excess Premature Deaths/year
Radon: Lung Cancer	1,500
VOCs: Lung Cancer	115
CO: Poisoning	23
ETS: Lung Cancer/ Heart Disease	380/3,600
Mold and Moisture: asthma and allergy	NA

# Carbon Monoxide

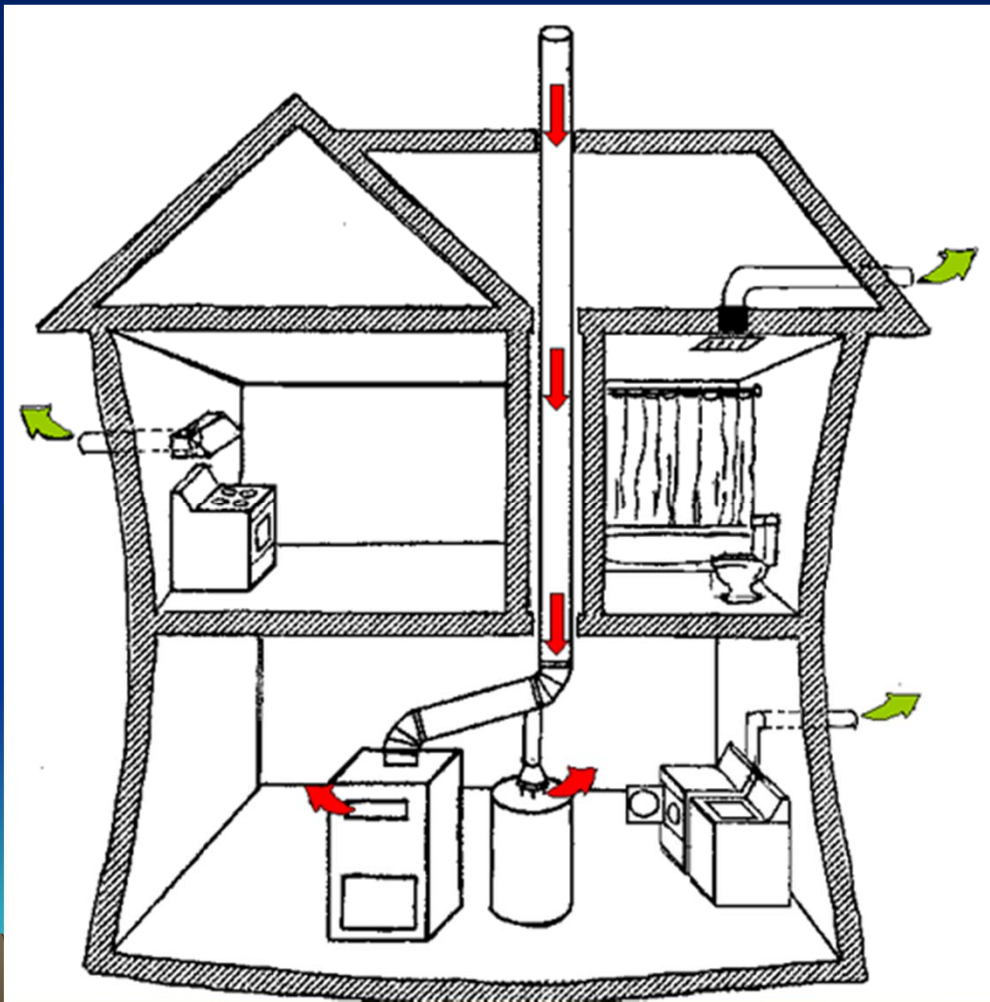
## 23 preventable deaths

Figure 2.2: Causes of CO Deaths in California



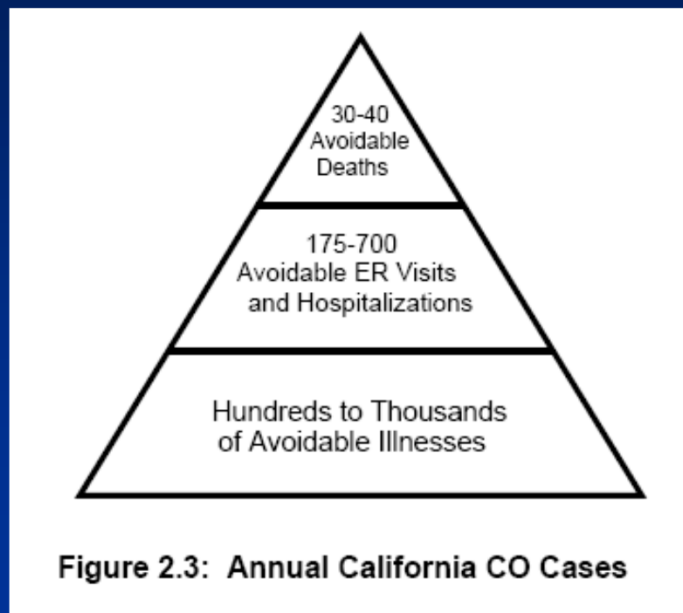
Source: California Air Resources Board, Indoor Air Pollution in Q&A  
<http://www.arb.ca.gov/research/indoor/ab1173/rpt0705.pdf>

# CO Poisoning from Combustion Appliance Backdrafting



# Carbon Monoxide

## Non-lethal effects



Effects: undiagnosed heart problems, headache, flu-like symptoms... chronic effects include lethargy, headaches, concentration problems, amnesia, dementia, psychosis, Parkinsonism, memory impairment, personality alterations, signs of parietal dysfunction, and other minor symptoms. For exposed mothers: low birth weight babies and pre-term births.

Source: California Air Resources Board, Indoor Air Pollution in Q&A  
<http://www.arb.ca.gov/research/indoor/ab1173/rpt0705.pdf>



# Energy Retrofit/Weatherization Activities in CA





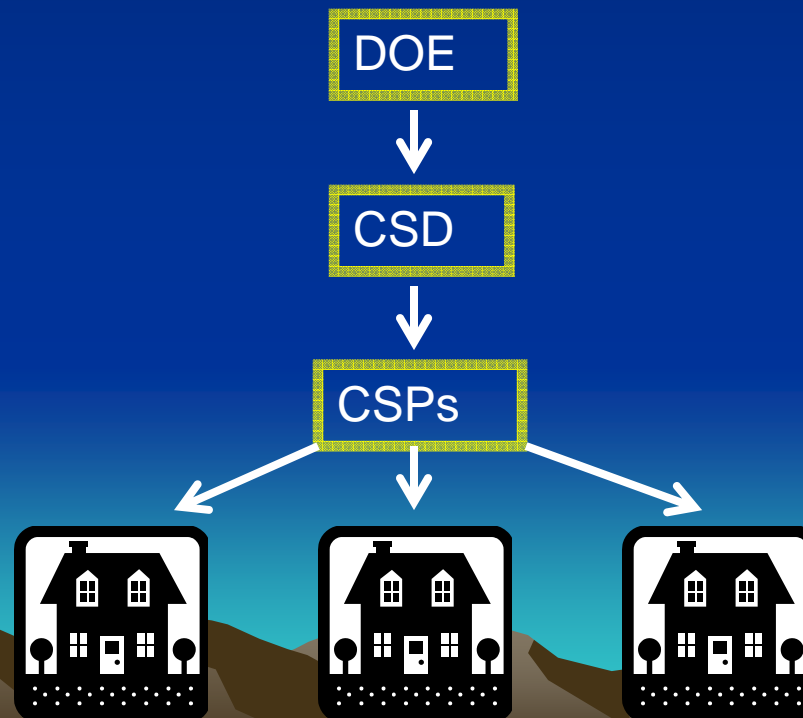
# LIEE – Low Income Energy Efficiency, aka Energy Savings Assistance Program - CA

- Rate Payer funded, overseen by the CPUC
- Implemented by the Investor-owned utilities (IOUs)
- Provides no-cost weatherization services to low-income households who meet the CARE income guidelines

Household Size	LIEE Income Limit
1 to 2	\$31,800
3	\$37,400
4	\$45,100
5	\$52,800
6	\$60,500
Each additional	\$7,700

# LIHEAP/WAP – Low Income Home Energy Assistance Program/Weatherization Assistance Program – Federal

- Funding from HHS and DOE
- Administered by CA Dept. of Community Services and Development
- Implemented by 28 Community Service Providers
- Provides no-cost weatherization services to low-income households who meet the LIHEAP/WAP income eligibility guidelines



# LIHEAP/WAP 2008 Stats

Percent of Income U.S. Families Spend on Energy:	3.5%
Percent of Income <b>Low-Income Families</b> Spend on Energy:	<b>14%</b>
Number of Homes Weatherized	20,623
Average Energy Investment	\$1,294
Average Annual Savings	\$418