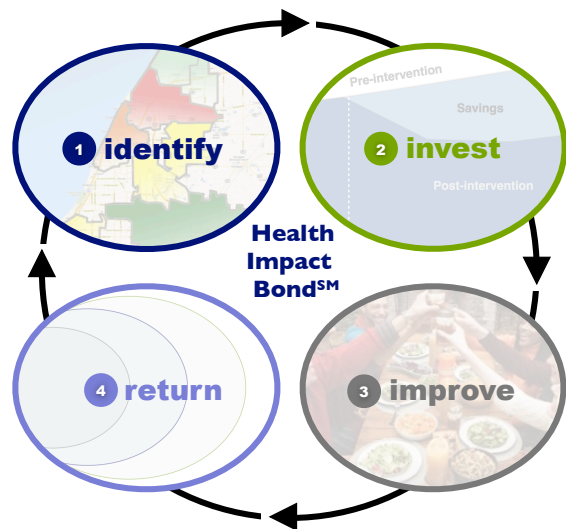


# **Health Impact Bonds<sup>®</sup>**

*Sustainable Investment in Health*

Health and Housing Funders' Forum • April 17, 2013

# Health Impact Bond®



Raise capital to address the underlying social and environmental causes of disease, in exchange for a share of future health care cost savings (*shared savings model*)

- Developed by Collective Health in 2011 with support from The California Endowment and UC Berkeley
- First-ever HIB to launch in Fresno – focus on asthma
- Pursuing asthma bonds in additional markets and expansion to other diseases

# Health Impact Bond®

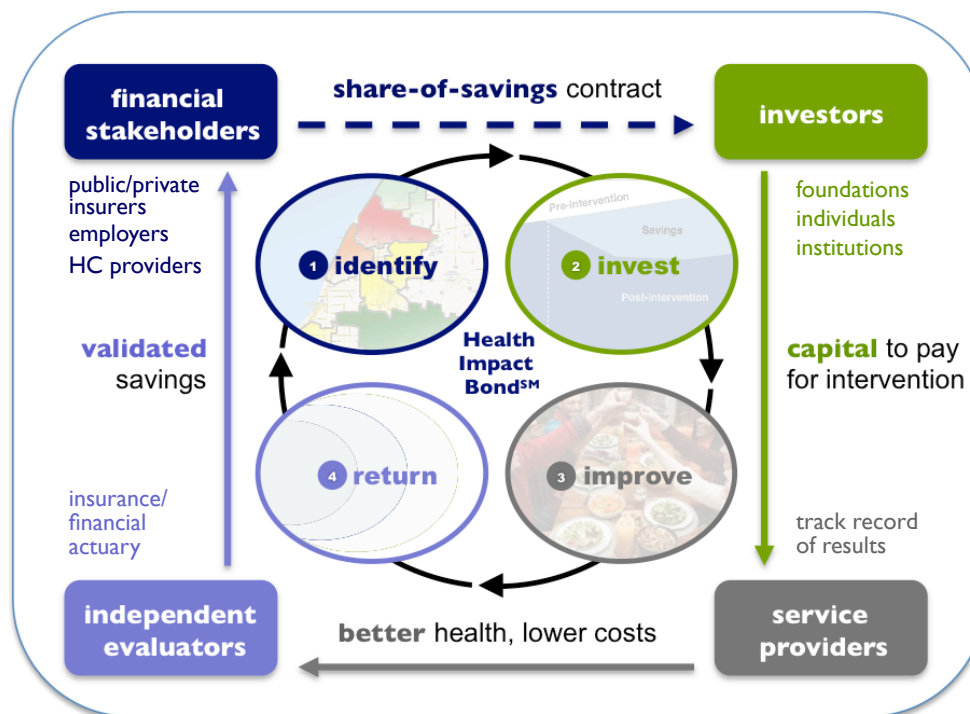
## How It Works

1

**Where are the hot spots – and who is paying?**

4

**Can the savings be validated and shared?**



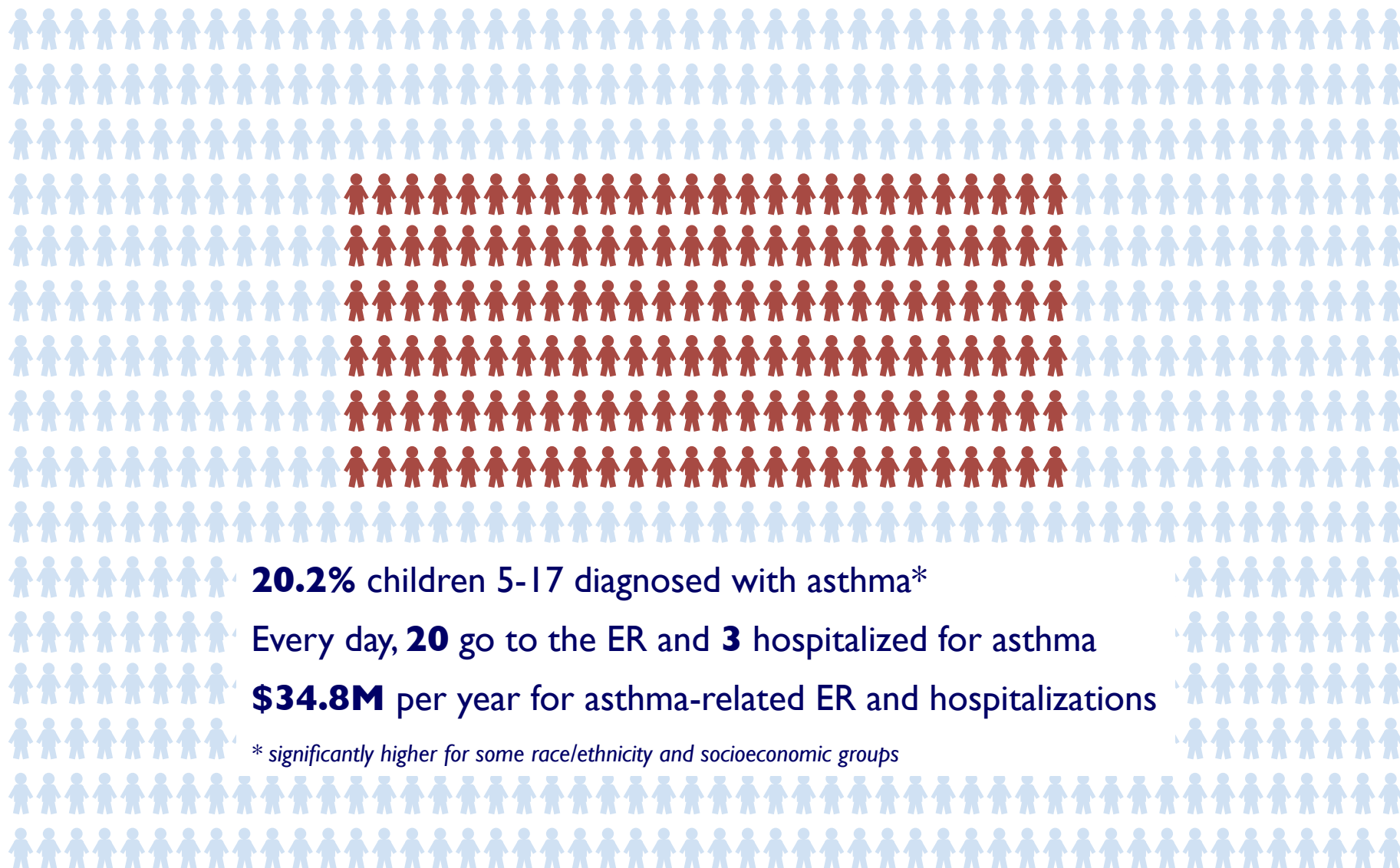
2

**What is the investment and risk/return?**

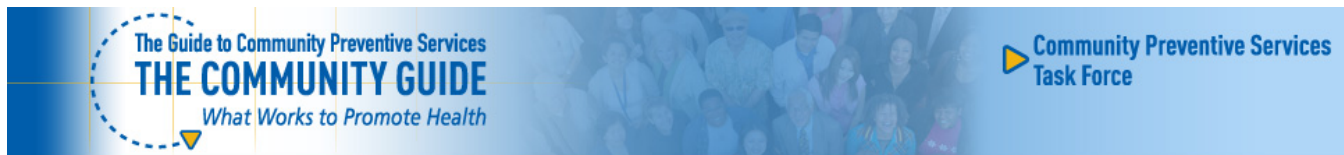
3

**What intervention and providers are evidence-based?**

# Asthma in Fresno: A Crisis for Children and Community



# Asthma: A Business Case for Prevention



Asthma Control: Home-Based Multi-Trigger,  
Multicomponent Environmental Interventions

## Economic Review

Cost-benefit studies show **return of \$5.3 to \$14.0** for each \$1 invested.

[www.thecommunityguide.org/asthma/multicomponent.html](http://www.thecommunityguide.org/asthma/multicomponent.html)

# PEDIATRICS®

Published online February 20, 2012  
Pediatrics Vol. 129 No. 3 March 1, 2012  
pp. 465–472  
(doi: 10.1542/peds.2010-3472)

## Article

### Community Asthma Initiative: Evaluation of a Quality Improvement Program for Comprehensive Asthma Care

Elizabeth R. Woods, MD, MPH<sup>a</sup>, Urmi Bhaumik, MBBS, MS, DSc<sup>b</sup>,  
Susan J. Sommer, MSN, RNC, AE-C<sup>a</sup>, Sonja I. Ziniel, PhD<sup>c</sup>,  
Alaina J. Kessler, BS<sup>a</sup>, Elaine Chan, BA<sup>a</sup>, Ronald B. Wilkinson, MA,  
MS<sup>d</sup>, Maria N. Sesma, BS<sup>e</sup>, Amy B. Burack, RN, MA, AE-C<sup>b</sup>,  
Elizabeth M. Klements, MS, PNP-BC, AE-C<sup>f</sup>, Lisa M. Queenin, BA<sup>b,g</sup>,  
Deborah U. Dickerson, BA<sup>b</sup>, and Shari Nethersole, MD<sup>b,h</sup>

Twelve-month data show a **significant decrease** in any ( $\geq 1$ ) **asthma ED visits (68%)** and **hospitalizations (84.8%)**.

<http://pediatrics.aappublications.org/content/129/3/465.abstract>

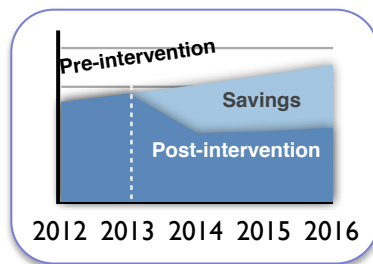
# Fresno Project Components

## 1 Target Population & Savings Analysis

Medi-Cal plans  
Self-insured employers

→ Lower ED (30%) &  
hospital (50%)

→ Save \$7,773 per  
person per year



## 2 Funding & Investment

Phase I: 200 individuals



**Health Impact Bond®**  
advisory group



Phase II: 3,500 individuals

foundations individuals  
institutions

## 4 Savings Methodology & Validation

Actuarial-based savings  
methodology using insurance  
claims data:

- Randomized control study
- Baseline/lookback period
- Trend analysis post-intervention



Validation: third-party actuary

## 3 Intervention Design & Implementation



# Fresno: Reducing Asthma Emergencies

## Projections – 1,100 children

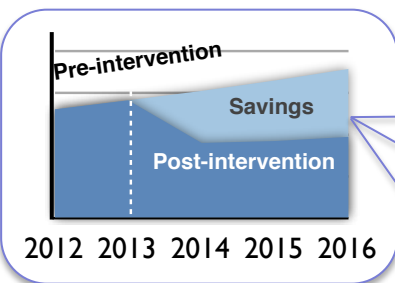
### 1 identify opportunity

- Reduce ED visits (30%) and hospital stays (50%)
  - Medi-Cal health plans
  - Self-funded employers

**\$8.5M savings opportunity**

### 4 return on investment

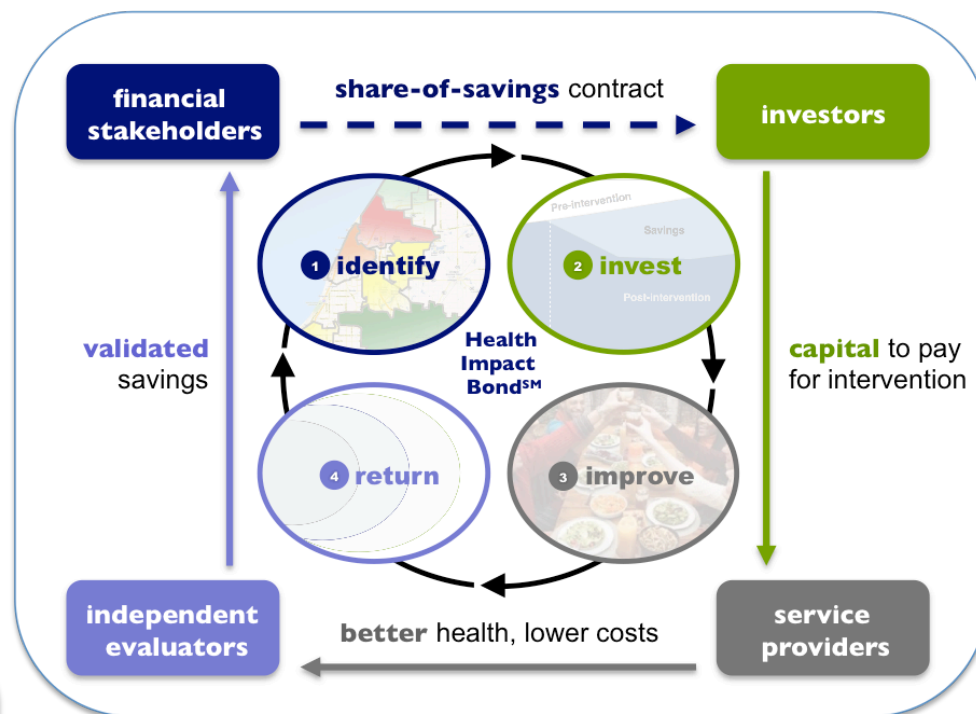
- Payers share validated savings



\$3M principal + interest repaid to bond investors

Intermediary/infrastructure costs

Most of savings is retained/re-invested by financial stakeholders (plus ongoing savings after first year)



### 2 invest in prevention

- Bond investors provide upfront capital
- Agreed interest rate and payback period

**\$3M upfront investment**

### 3 improve outcomes

- Evidence-based intervention by qualified service providers

**Home-based multi-trigger, multi-component asthma intervention**

# Fresno: Reducing Asthma Emergencies

## Projections – 1,100 children

### 1 identify opportunity

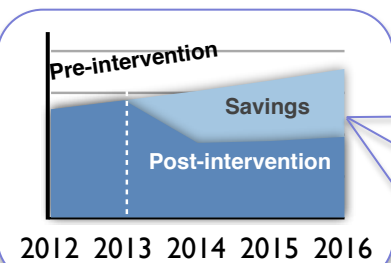
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**\$8.5M savings opportunity**

### 2 invest in prevention

### 4 return on investment

- Payers share validated savings



<u>Per Person Per Year</u>			
<b>Emergency and Hospital Costs</b>		<u>Assumptions</u>	
Pre-intervention:	\$16,371	<b>Unit Costs</b>	<u>ED visit</u> <u>Hospital</u>
Post-intervention:	\$8,598	Child	\$1,375 \$16,181
Savings:	<b>\$7,773</b>	Adult	\$1,375 \$23,074
		All	\$1,375 \$19,078
<b>Program Investment and Infrastructure</b>	<b>\$2,728</b>	<b>Avg # of Units</b>	1.50 0.75
		Pre-Intervention	
<b>Net Savings</b>	<b>\$5,045</b>	<b>Reduction</b>	30% 50%
<b>Net ROI</b>	<b>1.8</b>	Due to Intervention	

Intermediary/infrastructure costs

Most of savings is retained/re-invested by financial stakeholders (plus ongoing savings after first year)

**multi-component  
asthma  
intervention**



Rick Brush | rick@collectivehealth.net

Web: **collectivehealth.net**

Twitter: **twitter.com/collectivehlth**