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## A Market for Health: Shifting the Paradigm for Investing in Health

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### ABSTRACT

Efforts to make health care accessible to all Americans ignore a quiet truth: *more* health care services does not equate to *better* health outcomes.<sup>1</sup> Even if every individual had access to the highest quality clinical care, this does nothing to improve *non-clinical* factors that are significant contributors to new cases of disease. Despite their enormous impact these factors are mostly unaddressed by the current health care system.

To reduce the growth rate of chronic health conditions we must look at the context and quality of life that individuals experience: availability and choices of food; social networks and support systems; cultural influences and physical environments of our homes, workplaces, schools and neighborhoods. Growing evidence suggests that we must invest in these and other “upstream” *sources* of health—often referred to as the social determinants of health—to improve outcomes and reduce costs in a sustainable way.<sup>2</sup>

A significant challenge is the lack of financing for prevention and non-clinical health interventions, even

when these are grounded in clear evidence. Nonprofits, public agencies, and other service providers face a collective struggle for consistent funding for population-based programs proven to generate better health and lower costs.

With the support of The California Endowment and the Health Research for Action Center at the University of California Berkeley School of Public Health, and technical assistance from Collective Health LLC, this briefing explores the feasibility of using social impact investing to improve the sources of health in one California community. It is written with the intent of expanding the dialogue among community stakeholders, policy makers, business leaders, educators, investors and researchers. The authors welcome additional insights that can advance this project and others like it to promote impact investing as part of broad efforts to improve health outcomes. A second half of this white paper will be published to further detail the steps necessary to establish a Health Capital Market<sup>SM</sup>.

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### What Is Impact Investing?

Impact investing places capital in an organization that can create financial returns and achieve a social benefit. *The New York Times* writer Paul Sullivan has referred to impact investing as the “hybrid between philanthropy and private equity.” The emergence of impact investing began with traditional venture capital firms that wanted to fund start-up companies developing products and services that address environmental concerns. Social impact investing may take the form of equity, debt, working capital lines of credit, and loan guarantees to early-stage companies. Early examples of impact investing in the mid 1990s focused on green technologies or services that would create alternative energies, reduce green house gases, or protect scarce environmental resources. Micro financing, another form of social impact investing, allowed for relatively small investments to individual entrepreneurs in emerging economies where an investment of as little

as \$100 could produce significant opportunity to develop a small business and over time create sustainable income.

In the last three years, another form of impact investing introduced in Britain has garnered the attention of legislators, nonprofits and investors. In 2009, the first **social impact bond** was created to address a recidivism rate of 60% among prisoners in Peterborough Prison. Using funds from the UK's "Big Lottery", Macarthur Foundation, and private investors, the bond provides support to several nonprofit organizations that will work at preventing a repeat offense among parolees. One repeat offender can cost as much as \$126,000 to house in prison for one year. If the nonprofits succeed at reducing the recidivism rate, the Ministry of Justice will pay out dividends (up to 13.5% rate of return) to the bond investors using the "savings" represented in housing fewer prisoners. This model of financing programs that address chronic social conditions is different in three key ways:

[1] The nonprofits involved receive required financing up front—covering as much as 3 years of work—to produce targeted results, rather than waiting for payment after achieving results or needing to apply for funding on an annual basis.

[2] Socially minded investors bring a 'profit incentive' that can promote needed social benefits by funding programs with clear outcome measures and efficient operations.

[3] There is a long-term sustainable impact not only for those who benefit directly from the intervention but also for the broader community that is safer, more stable and healthier, and therefore more likely to improve results for future populations.

Policy analysts have commented that the ability to transfer this concept to the US will require an unparalleled level of collaboration between government agencies, nonprofits and investors.<sup>3</sup> There may also be political discomfort over creating "profits" by addressing the needs of the underserved, poor or disabled.<sup>4</sup> Others see challenges in capturing "savings" from one intervention across several state or federal agencies with long-standing silos and separate program budgets. Finally, some consider the "social value" generated by these programs too difficult to measure, thus making outcome-based funding unlikely.

However, there are signs of progress. The 2012 US Federal budget allows for up to \$100 million to pilot "Pay for Success" initiatives through innovation funds now moving forward within the Department of Justice and the Department of Labor.<sup>5</sup> Massachusetts recently announced the first RFP to pursue pay-for-success contracts and social impact bonds in the areas of chronic homelessness and juvenile justice.<sup>6</sup> Other states are moving forward as well.

This briefing describes a *market-based* approach to make social impact investing in health more widespread and sustainable. We propose to raise capital from private investors for evidence-based interventions that reduce health care costs by improving social, environmental and economic conditions essential to health. To our knowledge, this is the only market-based investment model targeting the social determinants of health.

## **Philanthropy versus Impact Investing**

Despite the financial austerity associated with the Great Recession, approximately \$290 billion in charitable contributions were given in the US in 2010.<sup>7</sup> The overwhelming majority of those

contributions, 73%, were given by individuals, with 5% by corporations, 14% by foundations, and 8% in the form of bequests. Half of those contributions were made to two types of institutions: educational (14%) and religious organizations (35%). Charitable giving has been one of the early hallmarks of our nation, and philanthropic support for social programs and initiatives will remain a key element of support for the nonprofit sector—particularly for new programs that require testing and development.

As important as traditional philanthropic grants may be for nonprofits, significant challenges exist. Many grants come with restrictions and limits to cover small periods of funding or for limited use. Managing a variety of grants with different restrictions yet focused on one program can add a complex layer of tracking and bookkeeping. In addition, the process of securing grants—applying, contracting and reapplying—requires resources that might otherwise be directed at service and program delivery. Unless interventions are selected based on evidence of prior results, grant makers may award dollars to programs with a limited likelihood of success. Grant makers may also change funding priorities making continued support unstable even if an intervention works well.

A “Pay for Performance” funding strategy is not a completely new construct for nonprofits or the public sector. In the 1990s, many foundations began to use “outcomes-based funding” targeting specific goals for a program or initiative. Performance-based funding in the public sector sets standards for achieving key outcomes—retention or graduation rates, job placement, or family re-unification rates—to determine funding levels in state appropriations. Still, challenges with measurement and accountability remain, and with ongoing revenue shortfalls endured by many states, budget cutbacks are likely to continue regardless of target outcomes being met.<sup>8</sup>

Impact investing can change this funding paradigm by engaging private investors with resources and interests aligned with targeted outcomes. Unlike foundation and government funding that are susceptible to budget shortfalls, there is a growing market of impact investors with capital for proven programs that demonstrate a reasonable return. The impact investment approach also adds a new level of accountability since evaluation metrics are agreed before funding is provided, and tracking of outcomes is tied to return on investment.

### **Creating a Market for Health: A Privately Funded Health Impact Bond<sup>SM</sup>**

Health spending in the U.S. approached \$2.6 trillion in 2010, with 12% of all workers employed in some aspect of the health care industry.<sup>9</sup> This creates strong economic forces—along with a prevailing cultural belief that medicine and scientific innovation can solve our nation’s health problems—that keep our attention almost exclusively focused on the medical model. One of the barriers to a more comprehensive social-environmental model of health is that it lacks this kind of market-based economic infrastructure; there are virtually no investment opportunities to innovate and extend non-clinical health interventions. In essence, the current “health” economy is aligned with the treatment of illness rather than improving the known sources of health.

Generating investment in the social-environmental model of health taps a growing movement towards “doing well by doing good.” This is an economy designed by social entrepreneurs that puts money, effort, and resources in the service of social good. Social investment is its own category, with numerous funds available for the investor interested in both a return and improving society. A more sustainable approach to health financing will tap the growing network of innovators, investors and entrepreneurs building momentum in this new economy.

We introduce the notion of a **Health Capital Market<sup>SM</sup>** to realign investment in evidence-based interventions that improve known sources of health and reduce health care costs. A Health Capital Market<sup>SM</sup> would create not just one but several mechanisms for funding proven health interventions. These would potentially include a **Health Impact Bond<sup>SM</sup>**, new insurance products, collective financing arrangements such as crowdfuding, and other innovations (see Figure 1).

<b>Health Capital Markets<sup>SM</sup>: investment alternatives</b>	
<b>Innovative health financing strategies that flow capital from impact investors, new insurance products, and other sources to high-impact/high-return health investments.</b>	
<b>Health Impact Bonds<sup>SM</sup></b>	⇒ Generates investment capital for evidence-based health interventions; principal and interest are returned based on share-of-savings achieved.
<b>Alternative Financing/ Incentive Structures</b>	⇒ Risk/gain sharing, health care cost “swap,” mutual health organizations (MHO), and other (re)insurance products that realign financial incentives, risk and use of reserve capital toward prevention and long-term health improvement.
<b>Health Credit Exchange<sup>SM</sup></b>	⇒ Modeled on the carbon credit market, facilitates trading of health risk offsets among financial stakeholders.
<b>Social Determinants “Pharmacy”</b>	⇒ Public and private sector resources “prescribed” to address upstream social and environmental health influences.
<b>Social Networks/Commons</b>	⇒ Collective financing arrangements: crowdfunding, group-purchasing cooperatives, microfinancing, social enterprise development funds.

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**Figure 1: A List of Investment Options within the Health Capital Market<sup>SM</sup>**

According to researchers, policy makers, and social entrepreneurs, the following components must all be present for a successful impact investment opportunity:

- Target outcomes must be clearly defined and achievable;
- The proposed intervention should reflect best practices;
- Measuring outcomes must be independently validated;
- A clearly defined “savings” or return value should be established; and
- Public agencies, nonprofits, investors and community stakeholders must all be willing to work together.

We further suggest that a successful Health Impact Bond<sup>SM</sup> will depend on the validated financial impact of proposed health interventions—*and* the ability to return a portion of that financial value back to investors.

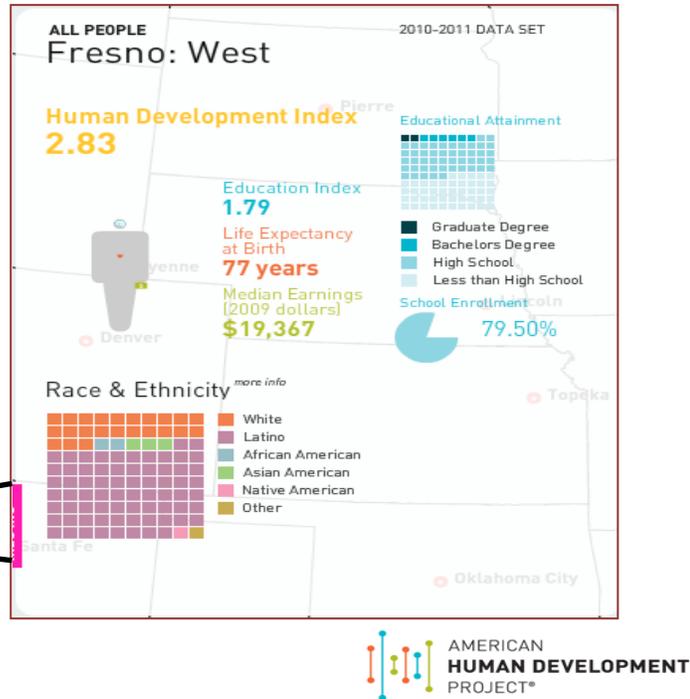
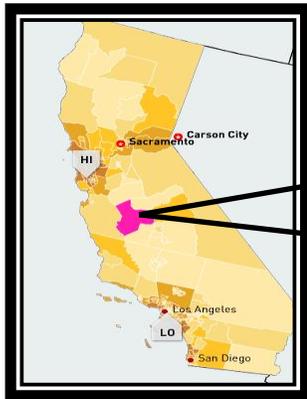
### **The Opportunity to Pilot a Health Capital Market<sup>SM</sup> in Fresno, California**

Fresno, California has been documented as one of several communities facing economic and social challenges that are defined as “concentrated poverty”.<sup>10</sup> The hardships faced by this community of 1 million residents have garnered the attention of several federal agencies and the California Endowment. In 2011, the US Department of Housing and Urban Development selected Fresno as one of six communities in the country for its Strong Cities, Strong Communities (SC2) Initiative, which brings together senior staff from the Environmental Protection Agency, Health and Human Services, and Department of Transportation in a coordinated manner to address factors associated with concentrated poverty. The California Endowment has included Fresno as one of 14 cities in its multi-year **Building Healthy Communities Initiative**.

The American Human Development Project uses an index to score communities on a scale of 1-10 by factoring educational attainment, life expectancy and median earnings. In its most recent review of data, West Fresno scores 2.83. This contrasts with the inner city suburb of Los Angeles, Watts, which scored 1.9 and the northern California community of Palo Alto/Mountain View with a score of 9.35.

## Why Fresno?

On a scale of 1-10, Fresno West scores 2.83—one of the lowest in the state of California—on the Human Development Index. By comparison, Watts (1.9) scores lowest and Mountain View/Palo Alto (9.35) scores highest in the state.



The Human Development Index indicates multiple opportunities to improve community vitality and health-related conditions in Fresno. After careful analysis, asthma was selected as the initial focus of the proposed impact investment approach in Fresno because it:

- Addresses a significant and quantifiable need in this community;
- Can be improved through evidence-based interventions aimed at modifiable social determinants of health; and
- Supports the success criteria outlined for impact investing in general and the Health Impact Bond<sup>SM</sup> in particular.

Fresno County has an estimated **200,000 individuals living with asthma**, who each year account for more than 6,000 emergency room visits and 1,100 hospitalizations, plus follow-up care and doctor office visits. When lost worker productivity is included, the annual cost of asthma in Fresno totals **\$87 million**.

Yet despite the staggering impact of asthma-related emergencies, less than half of those with asthma have been taught how to avoid asthma triggers, and almost half of those who have been taught do not follow most of this advice. Many of these asthma triggers include indoor air quality issues (dust, mold, pest infestation and other allergens) that can be addressed through environmental assessment and remediation in the home.

Using a methodology we refer to as **HealthSourcing<sup>SM</sup>** (see Figure 2) we illustrate the four process steps required to establish an investment-based approach to health savings:

- 1. Identify:** *Locate health care cost hotspots and the underlying sources of health/health risk with the most significant and actionable opportunities to intervene. Forecast financial impact of interventions based on evidence of effectiveness and demonstrated ROI.*
- 2. Invest:** *Create financing vehicles (e.g., Health Impact Bond<sup>SM</sup>) that connect investors to those with a financial stake in the targeted health improvement/cost reduction opportunity. Term sheet specifies capital requirements, return rate, and time horizon.*
- 3. Improve:** *Use evidence-based strategies to improve conditions that lead to better health and lower risk. Intervention providers are sourced based on efficacy and efficiency metrics, and are accountable to measurable results.*
- 4. Return:** *Validate the health cost savings secured through the intervention and distribute to investors and/or re-invest back into the intervention for expansion to new populations.*

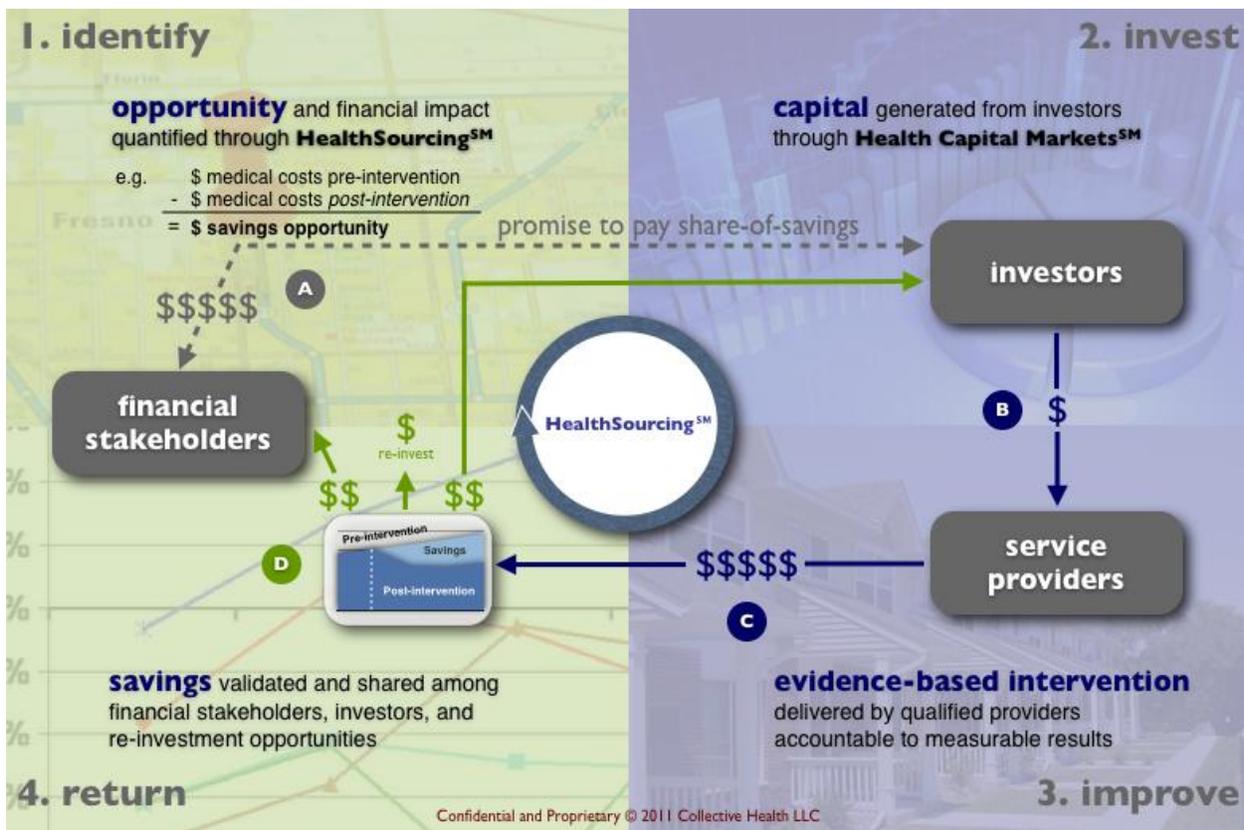


Figure 2: HealthSourcing<sup>SM</sup> Model

## Initial Projections

In Figure 3 we see the four process steps of HealthSourcing<sup>SM</sup> applied to reduce asthma-related emergencies among a target population of 1,100 in Fresno using an evidence-based intervention to address home-based environmental triggers. The \$1.1 million required to fund this intervention will be generated through a Health Impact Bond<sup>SM</sup>.

**1. Identify:** The cost of untreated asthma among 1,100 individuals in Fresno includes \$17.1 million in health care costs for emergency department services, hospitalizations and follow-up care. This assumes average cost of \$15,567 per person, based on service utilization and unit cost data for the county.<sup>11</sup> Additional costs related to missed school days, missed work days, and other medical and non-medical costs are not included in this total. Of the \$17.1 million, Medi-Cal alone pays \$8.1 million (47%) annually.

**2. Invest:** A \$1.1 million investment (\$1,000 per individual) aimed at reducing home-based environmental triggers to asthma among this group of patients may save over \$6 million in reduced medical costs for these targeted service areas—\$3 million of that savings for Medi-Cal alone.

**3. Improve:** This savings projection is based on a series of studies reviewed by the Centers for Disease Control and Prevention (CDC, Guide to Community Preventative Services, 2011).<sup>12</sup> In these studies, best practice home-based interventions were able to significantly reduce annual medical costs for emergency room visits and hospitalizations within 18 months.

**4. Return:** The financial benefits of these savings would accrue through reduced medical claims to Medi-Cal (\$3 million) and local employers with self-funded insurance plans (\$2.3 million), and also to local health care providers in capitated payment arrangements, accountable care organizations, and similar incentive structures (\$1 million).

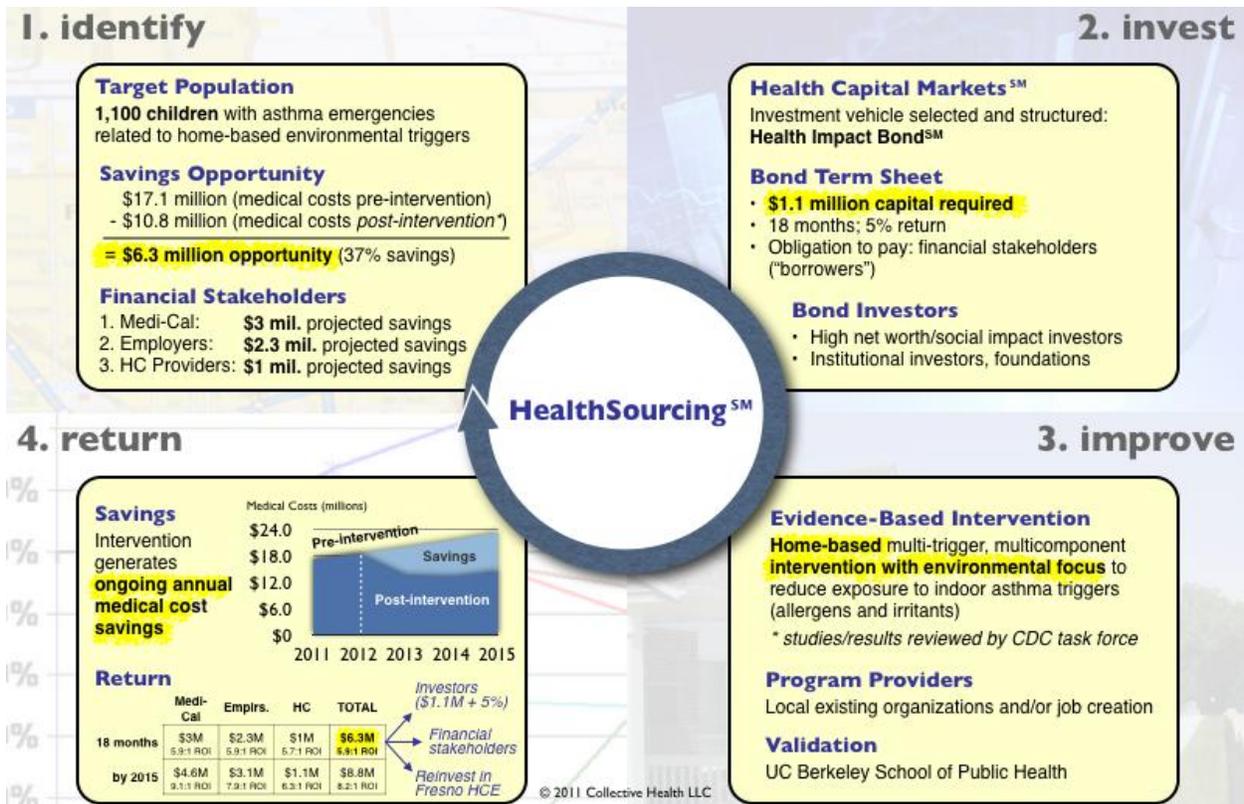


Figure 3: HealthSourcing<sup>SM</sup> model applied to Fresno Example

This model was presented to a group of stakeholders in Fresno on November 29, 2011, with resounding support and a desire to advance the initiative locally. In subsequent discussions, we

learned that prior efforts to address asthma in Fresno pointed to two existing providers. First, Clinica Sierra Vista emerged as a key provider of home assessments and patient education. Clinica Sierra Vista is a long-standing medical clinic with 40 sites throughout the region that has established itself as a trusted health care provider among residents in the low-income neighborhoods it serves. Clinica Sierra Vista has also been involved in prior studies on the impact of asthma among County residents, demonstrating the value of home health education for patients. Second, the Fresno County Economic Opportunities Council was identified as a provider in previous local Weatherization Plus Health programs. The Council has extensive experience in housing rehabilitation and trained staff in Weatherization Plus Health remediation efforts—a program sponsored in part by the Environmental Protection Agency and the National Coalition for Healthy Homes.

### Revised Projections

With input from the Fresno service providers, we have revised the estimated cost of the proposed intervention to \$2,500 per home, compared to the initial estimate of \$1,000 in our earlier model (Figure 3). This includes home health education at a cost of approximately \$500 per patient, plus an average of \$2,000 for remediation in the home: cleaning, air filters, pillow and mattress covers, pest removal, weatherizing windows, and minor repairs that contribute to the quality of indoor air.

Using evidence from a similar intervention,<sup>13</sup> we have also revised the annual baseline average cost of care for a patient with mild, moderate or severe asthma: **\$2,646**, **\$4,530** and **\$12,813**, respectively (compared to the initial estimate of \$15,567). Given the high risk profile in our target population, the average cost of care is estimated at \$10,212 per patient before intervention. Based on the CDC-reviewed studies referenced earlier, the proposed home-based intervention is expected to reduce the cost of hospitalizations and ER visits by \$4,219 per participant, for a total savings of \$4.6 million (41%) among the 1,100 participants.

	1,100 participants
Cost of care without intervention	\$11,233,750.00
Cost of care with intervention	\$6,593,125.00
Savings	<b>\$4,640,625.00</b>

Table 1: Total savings in health care costs alone

### Measuring the ROI for Addressing Social Determinants of Health

While our proposed project has yet to be conducted, we hypothesize that impact investment to address the social determinants of health represents a substantial opportunity to improve health and reduce health care costs. While new cases of asthma cannot be prevented, improving the quality of indoor air in asthma patients’ homes reduces their susceptibility to asthma attacks or further complications that can lead to more treatment through emergency services and hospitalization. The savings listed above only look at health care utilization costs. Reducing the costs of missing school or missing work would provide additional value.

Our return on investment (ROI) model is consistent with the approach highlighted in the 2009 *Prevention for a Healthier America Report*.<sup>14</sup> To measure the ROI for a prevention program, we

divide the net savings produced by the intervention (in this case, reduction in total medical costs) by the total program cost (cost of intervention). If the ROI equals zero, the program is essentially paying for itself. However, an ROI greater than zero indicates savings that exceed the cost of the program.

$$\text{ROI} = \frac{\text{net savings}}{\text{program costs}}$$

Even with the more conservative assumptions in our revised estimates, the ROI for the proposed project is: **1.69**.

$$1.69 = \frac{\$4,640,625}{\$2,750,000} \quad (\$4,219 \text{ saved per participant}) \times (1,100 \text{ participants}) \\ (\$2,500 \text{ cost per participant}) \times (1,100 \text{ participants})$$

For every dollar spent on the intervention, there is a \$1.69 return on investment. In a Health Capital Market<sup>SM</sup> strategy, validation of this return is what allows us to engage investors to provide upfront capital required for interventions.

### **Developing a Health Impact Bond<sup>SM</sup> for Fresno**

To test the feasibility of this project, the team from UC Berkeley and Collective Health has engaged financial stakeholders in Fresno that are currently paying asthma-related medical costs for populations with potentially high utilization of emergency services and hospitalizations. The following is a review of the four process steps outlined earlier that will be required to move forward with this proposed project.

**1. Identify:** To build a business case for a Health Impact Bond<sup>SM</sup>, Collective Health will use medical cost savings demonstrated in evidence-based interventions and build a model of projected savings for populations connected to insurance plans and other financial stakeholders in Fresno. This would potentially include Medi-Cal beneficiaries and commercially insured populations covered by Anthem Blue Cross, CalViva (Health Net), Kaiser, and other insurers, as well as employees and dependents who receive health benefits through self-funded employers, unions and trusts. Collective Health will work with these stakeholders to analyze medical and pharmacy claims and other clinical and non-clinical (social and environmental determinants) population data to hotspot individuals with the most significant risk and utilization related to poorly controlled asthma. Collective Health will quantify the potential savings using results from the validated studies, determine capital required for the intervention, and develop a financial prospectus illustrating the potential return on investment for a Health Impact Bond<sup>SM</sup>.

**2. Invest:** With the assistance of social impact investment firms, the Health Impact Bond<sup>SM</sup> will be offered to networks of investors—high net-worth individuals and institutional investors seeking social impact opportunities. For example, Mission Markets offers a private investment exchange for multiple asset classes and market-based mechanisms within social and environmental markets. An online platform of investment opportunities for sustainable environment, renewable energy and water conservation can be extended into the health-related sector using instruments like the Health Impact Bond<sup>SM</sup>. The ability to invest in this Health Impact Bond<sup>SM</sup> for Fresno will also be announced on the Fresno Health Capital Market<sup>SM</sup> website, which will offer innovative

financing solutions to raise capital for evidence-based interventions that improve the social determinants of health.

**3. Improve:** The intervention would target the populations covered by the participating financial stakeholders, and would be delivered by the local service providers mentioned earlier – Clinica Sierra Vista and the Fresno County Economic Opportunities Council – with clear measurement and accountability processes.

**4. Return:** Collective Health will engage independent validation of medical cost savings achieved by the intervention. A portion of savings achieved in the form of lower claim payments by the financial stakeholders (e.g., insurers and employers) will be used to repay principal and interest to the bondholders. Leftover savings can be used as re-investment capital in expanding the Health Capital Market<sup>SM</sup> approach to additional populations and health conditions of key importance in Fresno.

### **A Vision for Communities with a Health Capital Market<sup>SM</sup>**

With leadership from the White House Office of Social Innovation and a growing number of states, “Pay for Success” initiatives are beginning to move forward in the US. We believe this effort can be greatly expanded and accelerated with a market-based approach that engages private investor support, as proposed in this paper.

With the benefit of independent validation of researchers in public health, health care economics, financial services and investment markets, a Health Capital Market<sup>SM</sup> approach can become a viable option. Communities that engage stakeholders in this approach can create a sustainable path to better health, better care, and reduced health care costs.

### **Conclusion**

We are aware that governmental funding for worthy health projects is becoming increasingly difficult to obtain. Even when such funds are available, it is difficult to assure continued funding over a long enough period of time to effect sustainability of these efforts. Investment funding is a creative way to deal with both of these problems. This approach takes the idea of social determinants of health to a new and different place: it allows this way of thinking about health to become part of the mainstream of American life instead of being merely a marginalized “research project”. The evidence regarding social determinants is now so compelling that this shift is timely and appropriate.

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