

SkillWorks Initiative

**Return on Investment
Study: Community
Health Worker
Initiative of Boston**

From Insight to Impact
– worldwide

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Contents

- 1. Initiative Background and Report Overview..... 1**
- 2. ROI Limitations..... 1**
- 3. ROI Findings 2**
 - Flatline Scenario..... 3
 - Continuing Achievements Scenario 4
 - System Changes Scenario 4
- Appendix: Approach to ROI Analysis..... 5**
 - Overview of Approach to Calculating ROI..... 5
 - Sources of Data 7
 - Methodology for Counting Costs and Returns of CHW Initiative 8
 - Returns of the CHW Initiative..... 8
 - Investment in the CHW Initiative..... 14
 - Key Assumptions..... 18

1. Initiative Background and Report Overview

The Community Health Worker Initiative of Boston (the CHW Initiative) is a three-year public policy and advocacy effort that was implemented in March 2007. The primary goal of the Initiative, funded by SkillWorks: Partners for a Productive Workforce, is to improve career advancement opportunities for community health workers (CHWs). This is done through both individual-level and system-level policies and practices. Individual CHWs who enroll in the program are provided career coaching to help participants set education and career goals. Participants also have access to CHW certification and related training. At the systems level, the Initiative aims to make systemic changes by professionalizing and increasing recognition of the CHW field. Efforts to achieve this goal include working with employers to adopt career ladders, with community colleges to establish an education track for CHWs, and with a variety of health industry participants to increase the number of funding streams available to support CHW positions.

This ROI analysis is designed to calculate and compare the benefits and costs related to both types of the CHW Initiative's efforts to improve career advancement opportunities for CHWs and is a companion report to an overall evaluation of the CHW Initiative. The evaluation report contains more detailed information about participants and their achievements. This document assesses the return on investment (ROI) achieved by the CHW Initiative in its second year of implementation. Section 3 gives the results of the ROI analysis and discusses the primary drivers of these results. It also gives projections of the ROI for future years under several different scenarios.

The ROI is primarily a calculation of the benefits relating to CHW Initiative participants, who were the primary beneficiaries of the Initiative in Year 2. Although benefits are expected to accrue to other groups as well (employer-partners, non-participating CHWs, and community members), these groups did not experience benefits that are included in the ROI in Year 2.¹

Section 2 discusses some important issues and caveats to keep in mind when reviewing these ROI findings. The appendix presents detailed documentation about each component of the ROI model and identifies key assumptions.

2. ROI Limitations

The ROI is best suited for capturing tangible benefits and costs that can be expressed in monetary terms. For example, the Initiative's efforts to increase the amount of supervision for CHWs are intended to improve CHWs' job satisfaction. Although this effort could have a positive impact on CHWs, the ROI only counts this as a benefit if the improved job satisfaction results in a tangible outcome, such as reduced turnover. Reduced turnover results in tangible benefits in the form of savings to employers as well as fewer spells of unemployment (and therefore higher total earnings) for participants. Similarly, educational advances are included only if they are expected to increase CHWs' wages in the future.

¹ Year 2 is from April 1, 2008 through March 31, 2009.

Other benefits to CHWs that may not be adequately captured in the ROI include increased social networks, increased stability, and increased self-confidence. Benefits to employers that may not be adequately measured include expanded business networks,² access to policy makers and a better understanding of upcoming trends in CHW-related funding mechanisms.

By excluding these benefits or measuring them conservatively, we do not intend to suggest that they do not have value. Indeed, many people value social networks, business networks, self confidence, and other benefits very highly, as evidenced by their willingness to spend time and money to achieve them. However, from an ROI perspective, these benefits are very difficult to measure in monetary terms.

Because these important – but intangible – benefits are either excluded or measured conservatively, the ROI estimates should be interpreted as being a conservative measure of the returns from the Initiative.

3. ROI Findings

The ROI incorporates net returns from the CHW Initiative to five groups: participants, non-participating CHWs, employers, the community, and the CHW Initiative investors. The net present value (NPV) of benefits and costs are calculated for participants, employers, and the community; an ROI is calculated only for CHW Initiative investors.

As a measure of financial returns to an investment, benefits and costs are measured in dollar amounts. The ROI itself, however, is expressed in percentage terms, as is typical of reporting of financial results. Indeed, the results can be understood similar to the way financial returns to an investment are understood (i.e., the stock market returned 9 percent during the year). The primary difference between a financial return and the ROI presented here is that this calculation includes *social* returns as well as financial returns. Therefore, “returns” that do not accrue to the investors themselves are included, such as achievement of higher wages by CHW participants.

An ROI also is generally not annualized (such as the annual return on an investment in the stock market), but rather presents the total return of an investment with cash inflows and outflows over a number of years. The calculation for the ROI is:

$$ROI = \frac{NPV \text{ participants} + NPV \text{ non-participating CHWs} + NPV \text{ employers} + NPV \text{ community} - NPV \text{ CHW Initiative costs}}{NPV \text{ CHW Initiative costs}}$$

In the CHW Initiative, investments are made over four years (during the planning phase and the three years of the Initiative). The investments made include both financial (by investors) and non-financial (by employers and participants). Returns are projected over the length of time they are expected to be

² The three employer partners we interviewed were asked if they had collaborated with other employers as a result of the Initiative, and if they had experienced any cost savings as a result of this collaboration.

experienced (10 years³). We have calculated the ROI for the CHW Initiative using three different scenarios, described below. These range from conservative to optimistic. Because enrollment and participants’ career goal accomplishments have been more limited than expected, achievement of the systemic changes to improve funding for CHW positions are critical to the success of the Initiative as measured by the ROI.

A summary of the findings under these scenarios is presented in Exhibit 1. As shown in the table, none of the scenarios show a benefit to employers or the community, because employer-partners said in surveys and interviews they did not expect these benefits to materialize. However, if we find in future surveys and interviews that employers do see productivity improvements in participating CHWs or reductions in turnover, these benefits will be included in the ROI. Similarly, if CHW performance improves enough to impact community health, community members will benefit.

Exhibit 1 shows the ROI under each scenario, as well as the “net present value,” or NPV, of benefits to each group. The NPV is the value of benefits and costs that occur over a 10-year period, expressed in present dollar values, to facilitate comparison of net benefits that occur at varying times.

Exhibit 1. Summary of ROI Under Three Scenarios

	Flatline Scenario	Continuing Achievements Scenario	System Changes Scenario
ROI	-31%	22%	205%
NPV of Net Benefits to:			
Participants	\$1,531,767	\$1,686,382	\$1,531,767
Non-Participants	\$0	\$0	\$2,879,279
Employers	-\$151,769	-\$151,769	-\$151,769
Community	\$0	\$0	\$0

Flatline Scenario

The first scenario is the most conservative, in that we assume that Year 3 participants will achieve identical benefits as were achieved by participants in Year 2 (or an average of achievements in Year 1 and 2), and that Year 1 and 2 participants will not achieve any further gains than those accomplished by the end of Year 2. Further, no systemic changes will be achieved, and no groups other than participants will experience benefits. As detailed in the appendix, employers have not yet realized benefits from the Initiative, so in this scenario we assume they will not receive benefits in the future. Similarly, this scenario assumes that because they have not yet realized benefits, and non-participants will not experience higher wages as a result of systemic changes. Other scenarios assume benefits will accrue to non-participants.

Under this scenario, the return to the CHW Initiative’s investors is -31% indicating that the costs of the Initiative outweigh the benefits to participants. The primary drivers of this result are:

³ See the appendix for an explanation of the time horizon used to calculate the ROI.

- ❖ Achievements of participants in the Initiative in Year 2 were modest, but included gains in wages (or expected wages, based on educational attainments) and fringe benefits
- ❖ The systemic changes that are likely to affect hundreds of CHWs in the Boston area have yet to be accomplished
- ❖ Employers, members of the community, and non-participant CHWs did not experience benefits from the Initiative in Year 2

Continuing Achievements Scenario

The second scenario assumes that some Year 1 and 2 participants continue to be engaged in the Initiative, and continue to make progress on their career goals, including reaching educational milestones such as completing Associates' and Bachelor's degrees. In addition, the number of CHWs receiving increases in wages, fringe benefits, and hours increases as both Year 1 and 2 participants continue to progress in their careers through coaching.

Under this scenario, the ROI is 22%. The primary drivers of this result are:

- ❖ Modest increases in achievements of participants in Year 3, including increases in wages (or expected wages, based on educational attainments) and fringe benefits
- ❖ Some participants complete financial literacy training and make permanent reductions in their levels of debt, achieving savings on interest payments to creditors
- ❖ Systemic changes are assumed not to have been accomplished
- ❖ Employers, members of the community, and non-participant CHWs are assumed to experience no benefits from the Initiative.

System Changes Scenario

This scenario uses the baseline assumptions of the flatline scenario (e.g., participating CHWs' achievements level off rather than continuing to increase), but in addition assumes that the Initiative is successful in implementing system changes that result in CHWs earning higher wages of an average of \$.50 per hour. We assume there are at least 750 CHWs who will be affected by the system changes.

Under this scenario, the return to the CHW Initiative's investors is 205%, indicating large social returns from the investment. The primary driver of this result is the increase in wages experienced broadly by CHWs. Participating CHWs are also assumed to be affected by the general increase in wages that may result from system changes.

Appendix: Approach to ROI Analysis

ROI analysis considers benefits and costs that accrue to the multiple stakeholders of a project. It is not intended to be a rigorous, exhaustive analysis of all benefits and costs. Rather, it captures all monetary costs and benefits of a program and the most important intangible benefits and costs. In general, intangible benefits are evaluated conservatively, making the ROI a lower-bound measure of the return to a project. In addition to evaluation, the goal of calculating an ROI is to communicate the performance of the CHW Initiative in a way that is easily understood by investors and easily compared with other projects.

This appendix provides an overview of the ROI model and the algorithms and data used to generate key assumptions. The first section contains the overview; the next section describes the sources of data used; and the last section describes the methodology used in analyzing the costs and returns to the CHW Initiative

Overview of Approach to Calculating ROI

The ROI incorporates net returns from the CHW Initiative to five groups: participants, non-participating CHWs, employers, the community, and the CHW Initiative investors. The net present value (NPV) of benefits and costs are calculated for participants, non-participating CHWs, employers, and the community; an ROI is calculated only for CHW Initiative investors. As a measure of financial returns to an investment, all results are measured in dollar amounts.

In the ROI calculation, benefits and costs are measured relative to the counterfactual. That is, the ROI counts only benefits and costs that are directly attributable to the Initiative. For example, both CHWs who participate in the Initiative and those who don't are likely to receive pay raises. The ROI measures the benefit of a wage increase to CHW participants only to the extent that they are higher than wage increases of non-participants.

The benefits and costs evaluated are:

1. Participants

- Benefits
 - Increased earnings and fringe benefits from:
 - » Progression along career ladders
 - » Increases in educational attainment, from training provided by the Initiative; encouragement and assistance in attaining other education; and in new educational opportunities created by the CHW Initiative (e.g., new degree offerings at local colleges and universities)
 - » Improved funding for CHWs by public and private payers, including insurers, resulting in part from continued professionalization and recognition of the CHW field
 - » Greater employment stability (reduced spells of unemployment and underemployment) from systemic changes in funding sources
 - Greater financial stability from financial literacy training

- Costs
 - Costs of attending training

2. Non-participating CHWs

- Benefits
 - Increased earnings and fringe benefits from:
 - » Progression along career ladders
 - » Increases in educational attainment from new educational opportunities created by the CHW Initiative (e.g., new degree offerings at local colleges and universities)
 - » Increased funding for CHWs by public and private payers, including insurers, resulting in part from continued professionalization and recognition of the CHW field
 - » Greater employment stability (reduced spells of unemployment and underemployment) from systemic changes in funding sources
- Costs
 - Costs of attending training

3. Employers

- Benefits
 - Decreased hiring costs and savings due to reduced turnover
 - Improved CHW productivity from:
 - » Better-trained CHWs
 - » Additional revenue from hard-to-reach populations who currently underutilize health care
 - » Reduction in uncompensated pool of patients and unfunded community health work currently performed
 - » Savings from improvements in appropriate health care utilization
 - Management efficiencies from collaboration with other employers
- Costs
 - Additional supervision of CHWs
 - Paid release time for training and coaching
 - Paid release time for managers engaged in Initiative’s employer collaboration

4. Community

- Benefits: Value of improved quality of care
- Costs: None

5. CHW Initiative Investors

- Benefits: Sum of returns to participants, non-participating CHWs, community, and employers
- Costs: Investment in CHW Initiative by Robert Wood Johnson Foundation, Jessie B. Cox Charitable Trust, and SkillWorks capacity building funds

To calculate the CHW Initiative investors' ROI, the NPV of net benefits for each group are summed and then divided by the NPV of the investment (the costs of running the Initiative):

$$\text{ROI} = \frac{\text{NPV participants} + \text{NPV non-participating CHWs} + \text{NPV employers} + \text{NPV community} - \text{NPV CHW Initiative costs}}{\text{NPV CHW Initiative costs}}$$

Sources of Data

Data for measuring each component of the ROI are from several sources, listed below:

CHW Initiative: The CHW Initiative provided cost (budget) information about the program. The Initiative tracks its grants and spending as well as in-kind contributions such as office space, release time for partner representatives to attend meetings, and phone and IT services. Note that although in-kind contributions are tracked by the CHW Initiative, not all of these are included in the cost of the CHW Initiative. Some, such as release time for partner representatives to attend meetings, are considered a cost to employers rather than investors.

Employer-partner survey: The CHW Initiative administered a survey of its 11 employer-partners, and received responses from eight. Employers provided a listing of CHW job titles, information on the number of FTs/PTs in each job title, and data on compensation scales. Employers were also asked to provide data on worker educational levels and other characteristics, CHW turnover rates, turnover-related costs, training costs, and tuition reimbursement costs. The survey also asked employers for baseline data and evaluation plans for updating quantitative information from customer satisfaction surveys, cultural competency evaluations, third-party reviews for accreditation or funding, internal self-assessments, and service plans for improvements in customer outcomes.

Interviews with a sample of employers: We interviewed three employers, who employed a total of 58 CHWs as of the end of Year 2. These interviews were used to collect data on changes in quality of care, CHW performance and cultural competency, career pathway development and integration, and other changes in HR practices and working conditions for CHWs.

Other interviews: We also interviewed staff at ABCD about their recruitment efforts, services provided to Initiative participants, participants' education and career goals, and efforts to work with partners on systems change. We also interviewed people from the Initiative's education partners, Mass Bay Community College and Bunker Hill Community College, about their involvement in establishing an education track for CHWs.

Participant database: The CHW Initiative collected information from participants on current income, employment and salary history, education and training, and recorded information about activities undertaken as part of the Initiative, career goals set, and participant achievements. Instruments for collecting data included an intake form, a standard needs assessment, a career development planning tool, pre- and post-assessments for specific training, referral forms, academic transcripts, and self-assessments.

Participant, employer, and community data not available in data collected by the CHW Initiative were estimated with data from other sources to the extent possible. For example, the value of fringe benefits was estimated with data from the U.S. Bureau of Labor Statistics.

Methodology for Counting Costs and Returns of CHW Initiative

The motivation behind each of the benefits and costs for participants, non-participating CHWs, employers, and the community included in the ROI analysis is described in this section. This section also describes the inputs for evaluating each return or cost.

Returns of the CHW Initiative

This section provides the returns to each group considered in the ROI analysis: participants, non-participating CHWs, employers, and the community. Costs are described in the next section.

Participants

The primary benefits to participants from the CHW Initiative were expected to be: increases in wages, from a variety of sources; improved performance as a result of training and/or coaching; achievement of higher-level education; improved funding for CHWs resulting from systemic changes; and improved advancement opportunities created by new career ladders implemented as a result of the Initiative. In addition, participants benefit from increases in fringe benefits, increased annual earnings from improved employment stability, and improved financial stability as a result of financial literacy training and other assistance provided by Initiative coaches.

Increases in wages – observed

During Year 2, 23 participants received raises in their existing or new jobs, an average of \$1.50 per hour. In order to judge whether participants' wages increased beyond what they would have in the absence of the program, we examined whether participants were actively engaged in coaching, as illustrated by the participant accomplishing a career goal. Eight of these 23 participants who received a wage increase also achieved one or more career goals in either Year 1 or 2. A sample of the goals that were established include: completing an ESOL class, completing Advanced COEC training, and repairing credit. While it is not a definitive judge of causation, it is reasonable to assume that the CHW Initiative played a role in helping these eight participants advance at some level.

The average wage increase for these eight people was \$.83 per hour. This increase is attributed to the Initiative and included in the ROI calculation.

Increases in hours worked

Two people participating in the Initiative increased the number of hours worked per week. Both of them also achieved at least one career goal in either Year 1 or Year 2, indicating that the CHW Initiative may have played a role in helping this participant advance in his or her career. The participants work an average of an additional 6.5 hours per week, at \$22.50 per hour. The increase in annual earnings is attributed to the CHW Initiative and included in the ROI.

Increases in wages – Expected future wage gains from higher-level education

A total of 27 people enrolled in some type of training or education program during Year 2 of the Initiative. Benefits for people who completed the training are described below. With the exception of participants who enrolled in a bachelor’s degree program, we did not include benefits for participants who did not complete training. For the people enrolled in a bachelor’s degree program, we assume they will eventually achieve an increase in future wages.⁴

Twenty-three people completed a program ranging from receiving an industry-specific credential (Advanced COEC) to graduating from an Adult Basic Education or English for Speakers of Other Languages (ESOL) course (see exhibit A-2). Several of these people had enrolled in these trainings during Year 1.

Exhibit A-1. Participants’ Enrollment in Education and Training

Course of Study	Number of Participants Enrolling in Training
Enrolled in ABE/ESOL	1
Enrolled in college	2
Enrolled in college prep	1
Enrolled in industry-recognized credential (Advanced COEC)	21
Enrolled in sector-specific training	6

We assume that the industry-specific credential, Advanced COEC training, is equivalent to six college credits, because it qualifies for credit through Mass Bay Community College and Bunker Hill Community College. Of the 12 people who completed this training, one already had a college degree. We include the value of the college credits for all 12 participants, but include an increase in future wages only for the 11 participants without a college degree.⁵

⁴ The assumption for the amount of wage increase related to additional education is based on Barrow, Lisa, and Cecilia Elena Rouse, “The Changing Value of Education,” *Chicago Fed Letter*, Number 237, The Federal Reserve Bank of Chicago, April 2007. See also Card, David. 1999. “The Causal Effect of Education on Earnings” in *Handbook of Labor Economics*, Vol. 3A (Orley C. Ashenfelter and David Card, editors). (Amsterdam: Elsevier), pp. 1801-1863.

⁵ Ibid.

Exhibit A-2. Participants' Education and Training Attainment

Course of Study	Number of Participants Completing Training
Graduated from ESOL course	2
Graduated from college prep	2
Received industry-recognized credential (Advanced COEC)	12
Completed sector-specific training	4

Of those who completed a sector-specific training, four completed COEC training, and the other participant received specific disease-management training. These trainings are considered job-specific, and although they are necessary to perform the functions of a CHW, are not considered to have a lasting impact on participants' earning ability.

Two participants graduated from an ESOL course, which we believe has a measurable impact on participants' earning potential. Studies show that workers who are fluent in English earn about 14 percent more than workers who lack fluency.⁶ The improvement in earnings for these participants is included as a benefit in the ROI calculation.

Increases in wages – Expected future wage gains from improved funding for CHWs

The public policy initiatives that would lead to improved funding for CHWs are still in their early stages, so increased wages resulting from the Initiative's efforts to make systemic changes are not included in the ROI for Year 2.

Increases in wages – Expected future wage gains from improved advancement opportunities

No employer-partners who responded to the survey developed or adopted a career ladder as a result of their participation in the Initiative. Therefore, for Year 2, we have assumed there were no benefits to participants from improved advancement opportunities. During an employer forum in June 2008, the CHW Initiative held an initial discussion with employer partners about career ladder models. The executive director of the Initiative reports that no further progress was made during Year 2. Plans are currently underway to have work groups at the second annual employer forum, expected to be held in fall 2009, to focus on how to develop career pathways and its benefits.

Increases in fringe benefits

Four participating CHWs received increased benefits during Year 2. Two people gained access to a tuition assistance program; one person went from receiving no employer benefits to having access to health, dental, and life insurance and paid vacation. The third individual gained access to an employer pension program.

⁶ See, for example, Chiswick, B.R., & Miller, P.W. (2002). "Immigrant earnings: Language skills, linguistic concentrations and the business cycle." *Journal of Population Economics*, 15, 31-57.

Using achievement of career goals as a barometer of whether participants would have earned the advancement in the absence of the CHW Initiative, two of the four people receiving an increase in fringe benefits achieved a career goal during either Year 1 or Year 2, so we attribute their increases in fringe benefits to the Initiative and have included it in the ROI for Year 2. Both of these people gained access to a tuition assistance program. We assume that the value of the tuition assistance benefit is \$500.

Availability of formalized post-secondary CHW training

The Initiative has partnered with educational institutions to make formalized post-secondary CHW training available. This training is now available through Bunker Hill Community College and MassBay Community College; efforts to partner with the University of Massachusetts in Boston are still underway.

At Bunker Hill Community College, two students have officially declared as a major the newly created CHW certificate, leading to an associate's degree in human services. At MassBay Community College, a planned course was cancelled because of low enrollment, so no students have taken newly available courses. In addition, no students have declared the CHW specialization at MassBay Community College.

Because interest and enrollment in the formalized post-secondary CHW training is currently low, we have not attributed any benefits from these developments to the CHW Initiative for Year 2. If enrollment increases and we find evidence of specific benefits to enrollees, we will reflect benefits in Year 3.

Increased yearly earnings from improved employment stability

This potential benefit of the CHW Initiative has not yet materialized, because the systemic changes that would improve funding for CHWs have not been achieved. First, negotiations with insurers to make CHW services reimbursable should result in funding for CHWs being related to the services they provide rather than their employers' ability to obtain grant funding for their work. In addition, there may be other opportunities to improve funding for CHW services, such as efforts to increase grant funding from the Department of Public Health and to increase the duration of individual grants awarded. These changes should make CHW jobs much less subject to year-to-year budget changes.

The Initiative did support a successful effort to achieve recognition of Community Health Worker as an occupation by the federal Department of Labor in their labor codes. This is a first step in the process for obtaining Medicaid reimbursement for CHW services, because CHWs are now a "recognized occupation." We will include these components of CHWs' improved career path when the Initiative achieves reimbursement for CHW services or other improvements in funding for CHWs.

Improved financial stability

As of the end of Year 2, several participants had enrolled in basic financial literacy training designed to assist them with reducing their consumer debt, increasing savings, and acquiring assets that can support financial security. Although two of them have completed the training, the CHW Initiative participant database does not show reduction in the amount of debt, an increase in assets, or an increase in savings. In addition, evaluations of the impact of financial literacy education are generally

inconsistent and one author suggests that the evidence should be viewed with “cautious optimism.”⁷ However, studies have shown positive results on savings rates and debt reduction.⁸ Therefore, we assume that participants will reduce debt by \$2,600 over the next year and include this benefit of completing financial literacy training in the ROI calculation.

Participants receive help in improving their financial stability in other ways as well. For example, five participants received assistance completing college financial aid applications. Although these achievements were not initially expected outcomes from the Initiative, they are reflected in the participant database and are included in the ROI. Although coaches likely also provided other types of assistance, they are not recorded and have not been included in the ROI for Year 2.

The value of the service provided to participants in completing the Free Application for Federal Student Aid (FAFSA), however, has been included as \$100 per participant, which is the amount a private preparer might charge.⁹ None of these participants enrolled in college during Year 2, but we assume that two of them will enroll during Year 3.

Non-participating CHWs

The three primary possible benefits for non-participant CHWs from the Initiative are:

- ❖ Development of a career ladder, leading to higher potential for wage growth with their employer
- ❖ Improved funding for CHWs by insurers/others, resulting in improved employment stability and higher wages
- ❖ Availability of formalized post-secondary CHW training (through Bunker Hill Community College, MassBay Community College, and the University of Massachusetts in Boston)

These benefits have largely not yet materialized. The public policy initiatives that would lead to improved funding for CHWs are still in their early stages; the formalized post-secondary CHW training has low enrollment and its impacts are unclear; and no employer-partners surveyed reported having developed or adopted a career ladder as a result of their participation in the Initiative. For Year 2, we have assumed there were no benefits to non-participating CHWs from the Initiative.

Employer-Partners

The primary returns of participating in the Initiative to employers were expected to be: returns due to reduced turnover; returns from collaboration with other employers; returns from improved CHW productivity as a result of training; and increased revenues (from additional patients, reduced pool of uncompensated patients, and reduced unnecessary ER visits). Not all of these returns were realized in Year 2, as discussed in detail below.

⁷ Todd, Richard M. 2002. Financial Literacy Education: A Potential Tool for Reducing Predatory Lending? *The Region (Federal Reserve Bank of Minneapolis)*. 16 (December): 6-13.

⁸ O'Neill, Barbara. 2001. Money 2000™ program impact report, cited by Fox, Jonathan, Suzanne Bartholomae, and Jinkook Lee, 2005, Building the Case for Financial Education, *The Journal of Consumer Affairs*, Vol. 39, No. 1.

⁹ Rate from www.fafsa.com, accessed July 28, 2009.

Returns due to reduced turnover

In the employer-partner survey, every respondent indicated that one of their primary reasons for participating in the Initiative was to provide educational opportunities for their current CHW employees. Essentially, the Initiative provides an inexpensive way for employers to offer their employees an additional benefit at very low cost. The returns of this additional benefit are not directly measurable, but the likely improvement in job satisfaction from the additional benefit should eventually impact turnover, saving employers the costs of recruiting, interviewing, and training new workers. Because we have not yet found evidence of reduced turnover, as described below, this benefit is not included in the ROI in Year 2.

Three employer-partners specifically said reducing turnover was one of their top three reasons for participating in the Initiative in the employer survey. However, no employers we interviewed said they had noticed lower turnover in 2008 among participants than among non-participants.

Because no employer-partners reported lower turnover in 2008, no savings are included in the ROI for Year 2. There may be a lag between CHWs' improvement in job satisfaction and lower turnover, so we will re-consider this potential return from the CHW Initiative in Year 3.

Returns from collaboration

Through the CHW Initiative's employer collaboration, employers meet together regularly in forums and as members of committees designed to advocate for and implement systemic changes in the treatment of CHWs. These collaborations were expected to result in some management efficiencies (for example, through learning best practices from other organizations); however, none of the employers we interviewed said they had experienced cost savings from collaborating with other employers to date. One employer interviewed did report an improved relationship with another employer partner, which had helped smooth some management issues, but did not indicate that this had resulted in cost savings.

Therefore, no savings due to collaboration with other employers are included in the ROI for Year 2.

Returns from improved CHW productivity

The training participants receive through the Initiative may result in returns to employers, if it improves the productivity of CHWs, enabling them to serve more patients or reduce the number of CHWs or other staff needed to accomplish the same work.

There is some evidence that the CHW Initiative improves job performance. Three of the eight employer-partners surveyed reported that their participating CHWs had either moderate or significant improvements in several areas: outreach skills; ability to support, advocate, and coordinate care for clients; writing and technical communication; understanding CHW role; and communication with their supervisor. Two of the eight employer partners reported that participating CHWs had moderate or significant improvement in their interest in training or education opportunities.

The three employer partners we interviewed did not report that job performance improvements were significant enough to result in savings. Therefore, no savings from increased CHW productivity are included in the ROI for Year 2.

Increased revenues

For CHWs who assist in directly providing medical care, better training could result in increased revenues for their employers in the form of additional patients, a reduced pool of uncompensated patients (because of assistance provided in connecting patients with health insurance), and improved appropriate health care utilization (e.g., reduced avoidable emergency room visits).

Increased revenues may eventually materialize, but have not yet. None of the employers we spoke with said the Initiative had reduced expenses or increased revenues. In general, the CHWs being served by the Initiative have limited opportunity to impact revenues. Only four of the Initiative's 11 employer-partners provide direct medical care to patients, and of these, only three report that most of their CHWs have direct contact with clinicians on a regular basis.

Therefore, no increased revenues from the Initiative are included in the ROI for Year 2.

Community

The general community may benefit from the CHW Initiative through improved health outcomes, if the Initiative improves the quality of care provided by CHWs (through training and increased professionalization of the field), or increases the number of CHWs available to serve community members (through systemic changes that make some CHW services reimbursable by insurers or that expand other funding sources).

These benefits have yet to be realized for several reasons. Among others, the Initiative currently involves only a small share of all CHWs in the community at this point; participants have been enrolled in the Initiative for an average of only 36 weeks; and the career goals accomplished and other activities completed have been limited to date. In addition, the systemic changes that might make it possible for the CHW workforce in Boston to expand have not been achieved yet. Last, CHW turnover has yet to be affected by the Initiative. Departure of a CHW who has built trust with the community or with particular clients can reduce the strength of the connection between that community/client and the health care system, to the detriment of the community/client. For all these reasons, it is unlikely that the Initiative has had an impact on health outcomes for community members.

Investment in the CHW Initiative

The previous section described the returns to each group considered in the ROI analysis: participants, non-participating CHWs, employers, and the community. This section describes the costs of the Initiative, including monetary costs for staffing, office space, and training. It also describes indirect costs incurred by participants and employers to participate in the Initiative.

Participants

The primary costs to participants in the Initiative are the direct and indirect costs of training. The Initiative covers the direct costs of several types of training, including Advanced COEC. In addition, release time is offered through the Initiative by employers to attend some trainings. However, some participants have enrolled in education or training programs that they pay for themselves.

As of the end of Year 2, five participants were enrolled in college programs. Several of these enrolled during Year 1, and the costs of these programs are assumed to be the same as they were in

Year 1. One person enrolled in college during Year 2. We assume no lost wages for education, because employment data show that the person was working full time at the time of enrollment. We also assume that he or she attends school part time, so the direct costs of education are the per-credit fees for a student enrolled half-time.

Non-participating CHWs

Non-participating CHWs do not incur any costs in the Initiative. Initiative staff time spent providing information and assessing prospective participants to determine program eligibility is reflected in the Initiative's cash and in-kind spending (see Exhibit A-3).

Employer-Partners

The primary investments made by the Initiative's employer-partners in Year 2 were release time for employees attending coaching and training and to attend employer-collaboration meetings. In addition, some employers were expected to incur costs in providing additional supervision for their CHWs.

Costs of additional supervision

Employers participating commit to a minimum of one hour of supervision every two weeks for all CHWs; however, none of the employers we interviewed said they had increased the level of supervision provided to their CHWs. All the employees said they provided at least the minimum level of supervision prior to joining the Initiative.

Therefore, we have not included any costs in the ROI to reflect additional supervision.

Costs of coaching and additional training

Costs for release time for coaching and training were included in the ROI. Specifically, employers participating commit to provide 12 hours per year of paid release time for coaching for participants, and up to 56 hours per year for participants for training.

The cost to employers for release time related to coaching was calculated based on the following inputs:

- ❖ Average wage of CHWs at enrollment (\$16.44)
- ❖ A total of 200 coaching sessions with participants (an average of 3.3 per participant)¹⁰

The release time provided to participants for training was almost exclusively for the Advanced COEC program. Although participants attended a number of other trainings, these were held outside of work hours and did not involve release time. The cost to employers for release time to attend Advanced COEC was calculated based on:

- ❖ Average wage of CHWs at enrollment (\$16.44)
- ❖ Number of participants enrolled in Advanced COEC (17)

¹⁰ The estimate of number of coaching sessions was provided by Kenya Elisa-McLaren, CHW Initiative program director.

- ❖ Number of hours of class time in Advanced COEC (56)

Costs to employers also include the tuition reimbursement paid to participants, to the extent that these exceed reimbursements that would be made in the absence of the Initiative. However, employer-partners surveyed reported that none of their CHW employees who took advantage of tuition assistance were participants in the Initiative.

Although we have included release time for participants as a cost to employers, the employers we spoke with said they had not incurred costs to cover this time (e.g., hired new staff or paid an existing staff member for extra hours to cover absences). Rather, CHWs generally make up work missed for coaching and training.

Costs of collaboration

Employer-partners invest a great deal of time in the Initiative to attend meetings to accomplish systemic changes and participate in the employer collaboration. The cost of this collaboration was calculated based on these inputs:

- ❖ Average wage of partner representatives attending meetings (\$45.50)
- ❖ Total number of meetings (9)
- ❖ Hours per meeting (2)
- ❖ Number of representatives per meeting (10)¹¹

As with release time for participants in the Initiative, we have included the costs of collaboration as an investment made by employers although none of the employers we interviewed said they had incurred direct costs to cover this time. Rather, partner representatives generally make up work missed for the meetings and/or their productivity may temporarily decline slightly. Including the full cost of missed work time in the ROI may overstate employers' contributions and make this a conservative estimate of the ROI.

Investors

Investment in the Initiative occurred through both direct cash contributions and via in-kind contributions of personnel time, office space, meeting space, and others. The direct cash investment in the ROI for Year 2 includes the planning period, Year 1, and Year 2. In-kind contributions are counted differently in the ROI than in the Initiative's reports to SkillWorks, in that some in-kind contributions are counted as a cost to specific parties (such as the costs to employers for release time) rather than in the total investment amount. Total amounts spent in the CHW Initiative are shown in Exhibit A-3.¹²

¹¹ Cost of collaboration calculations were provided by Kenya Elisa-McLaren, CHW Initiative program director. Employer collaboration consists of meetings of the steering, education and training, and public policy committees. Each met three times during Year 2, for a total of two hours, and had an average attendance of 10 people.

¹² Investment in the CHW Initiative and spending vary somewhat because some funding was unspent in Year 1 of implementation.

Exhibit A-3. Cash and In-Kind Spending in the CHW Initiative

	Planning		Implementation, Year 1		Implementation, Year 2		Total	
	Cash	In-Kind	Cash	In-Kind	Cash	In-Kind	Cash	In-Kind
Salary and Fringe Benefits								
Program Management	\$14,364	\$81,263	\$70,488	\$45,752	\$68,495	\$47,125	\$153,347	\$174,140
Career Coaches/Case Mgmt Staff	\$0	\$0	\$73,279	\$0	\$102,742	\$0	\$176,021	\$0
Data Entry	\$0	\$0	\$0	\$7,309	\$0	\$7,528	\$0	\$14,837
Contracts								
Training: Advanced COEC	\$0	\$0	\$39,201	\$0	\$55,970	\$0	\$95,171	\$0
Training: Referral Trainings	\$0	\$0	\$0	\$5,750	\$0	\$10,800	\$0	\$16,550
Non-Training	\$27,200	\$0	\$77,030	\$0	\$179,135	\$0	\$283,365	\$0
Non-Personnel								
Space(Staff Facilities)	\$1,950	\$0	\$7,800	\$0	\$7,800	\$0	\$17,550	\$0
Equipment and Supplies	\$516	\$2,000	\$8,864	\$0	\$2,000	\$0	\$11,379	\$2,000
Program Participant Support Services	\$0	\$0	\$0	\$0	\$10,000	\$0	\$10,000	\$0
Event and Meeting Costs: meeting space	\$0	\$0	\$268	\$2,100	\$1,732	\$2,100	\$2,000	\$4,200
Other Costs	\$1,800	\$0	\$2,081	\$9,846	\$39,701	\$0	\$43,582	\$9,846
Indirect Costs								
Indirect Costs	\$4,170		\$25,390	\$0	\$42,549	\$0	\$72,110	\$0
Total	\$50,000	\$83,263	\$304,400	\$70,757	\$510,124	\$67,553	\$864,525	\$221,573

ROIs projected for future years include estimates of future planned investments/expenditures, treated the same way as past investments (e.g., in-kind contributions by employers of release time for participants are counted as a cost to employers, not as a cost to investors).

Key Assumptions

Several assumptions are key to the ROI calculation. These include the time horizon over which investments and returns are calculated, and the rate used to discount future expenditures and returns to the present time period.

Time Horizon

For each yearly cohort of participants, benefits and costs are calculated for a period of ten years. Although participants have an average of about 23 years remaining in their career (until turning 65), a shorter period is used because we assume many participants will change careers. Actual data from the Initiative are used for Years 1 and 2; the model estimates returns for the remaining nine years.

Discount rate

As noted in Lingane and Olsen (2004), there is no rule for determining the appropriate discount rate¹³ for a social return on investment calculation. In general, a larger discount rate implies a higher degree of risk. Thus a very safe investment might use a discount rate equal to the current federal Treasury Bill rate; a riskier investment might use a higher rate. This analysis (and any calculation of a social return on investment) relies on many assumptions, each of which introduces uncertainty into the calculation. In addition, some of the returns included in the projected ROI are dependent on systemic changes that have not yet happened. Because of the uncertainty of realizing future returns, we have used a higher discount rate to most appropriately reflect this risk.

The choice of the discount rate has a small impact on the Year 2 ROI, when many of the returns on the investment are known. It has a much larger impact on projected ROIs, which have correspondingly larger uncertainty. We use the rate on an A-rated corporate bond with a 10-year maturity (similar to the seven-year period over which returns to the Initiative are calculated). This rate averaged 5.6 percent over the Year 2 period of April 2008 through March 2009. In comparison, the rate on Treasury bills with a 10-year maturity was 3.4 percent.

¹³ A discount rate is similar to an interest rate. It is a key assumption in calculating a net present value, which allows investors to consider the time value of money (i.e., a dollar earned 10 years from now is worth less than a dollar received today). Dollars spent or earned in the future are “discounted” to a value that allows them to be compared with present dollars. The concept is important in investing, which typically requires money to be spent up-front, and returns to be received sometime in the future. For example, a \$100 current investment requires a return of greater than \$100 sometime in the future to allow the investor to break even. Among other things, the \$100 invested has alternative uses that yield a positive return (such as buying a Treasury bond). The selection of the discount rate depends primarily on the risk of the investment and current interest rates.

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