ROI TOOLKIT

A GUIDE FOR CONDUCTING A RETURN ON INVESTMENT ANALYSIS OF YOUR COMMUNITY HEALTH WORKER PROGRAM

MHP Salud

ABOUT MHP SALUD:

MHP Salud implements Community Health Worker (CHW) programs to empower underserved Latino communities and promotes the CHW model nationally as a culturally appropriate strategy to improve health.

TABLE OF CONTENTS

SECTION

1

INTRODUCTION

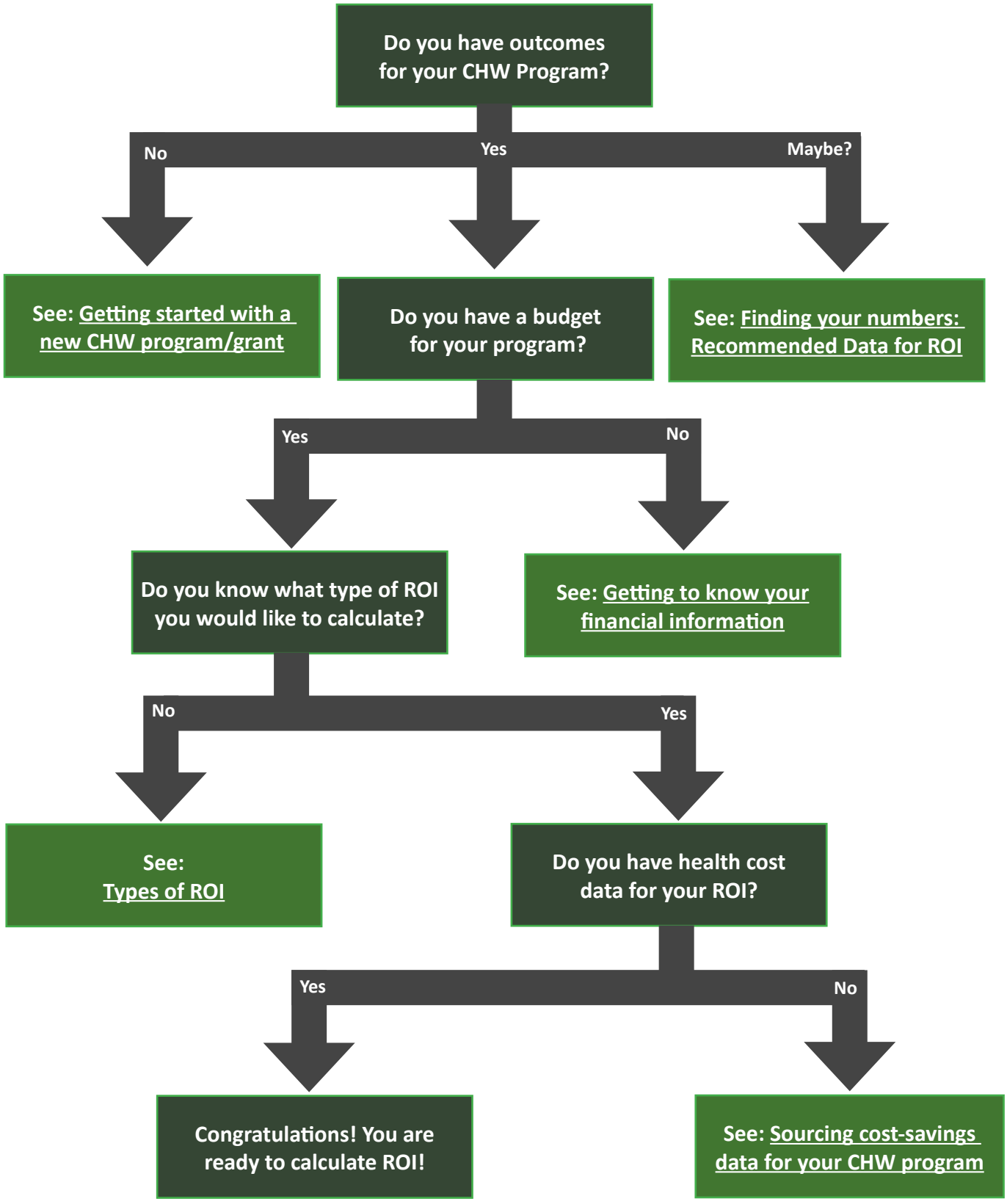
WHY SHOULD YOU CARE ABOUT RETURN ON INVESTMENT FOR CHW PROGRAMS?

- Success and impact should be replicated and shared.
- Community Health Workers (CHWs) have proven impact.
- Proving return on investment (ROI) is key to the sustainability of your CHW programs and for the CHW model as a profession.
- ROI is an important financial tool; people want to know what they will receive as a result of their investment in a CHW program.

This ROI Toolkit is for everyone—for those that understand ROI very clearly and for those new to, and a little intimidated by, the concept of ROI.

This is a toolkit to figure out the ROI of a CHW program unique to your organization. MHP Salud has worked with various Health Centers to develop a process for determining CHW program ROI.

The following flow chart will guide you through some typical questions about where you are in the ROI process.



MANAGING YOUR EXPECTATIONS FOR ROI

- Remember, calculating ROI is a process.
- It will take some time, planning, and research.
- You may not get it right the first time, but the process will give you a starting point to gauge the data and information you have about your program and allow you to devise a path forward.
- It is possible that as you begin working through this process, you will discover you are not ready to calculate ROI. What then?

This toolkit is designed to help you learn and understand key steps and factors involved in calculating a ROI. The flow chart on the previous page will help you work through this process. If at any point you find you are missing a key component or lack sufficient data to move forward, this will be an indicator that it is time to take a step back and reevaluate.

Please note:

- Not all CHW programs collect sufficient data to estimate an ROI.
- If you are not currently collecting enough data or lack the right type of data to calculate a ROI, this process will show you what type of outcomes you need to build into the next iteration of your program and what you will need to evaluate. You can refer to MHP Salud's **Evaluation Toolkit** and **Program Database and User Guide** to help you get started in learning more about CHW program data and evaluation.
- Not everyone will be ready to calculate ROI their first time.
- This process can be overwhelming your first time through, but ideally, this toolkit will break the process into more understandable components. And remember, MHP Salud is available to answer any questions you have about this process or this toolkit.

As you move through the toolkit, you will see these icons within each section. These will be indicators for you to pause, review, and practice what you have learned in that particular section.

Key information you should take from this section

Examples for this section

Now you try it!

WHAT IS ROI?

A return-on-investment (ROI) calculation is the total value of the benefit/profit resulting from a program divided by the total program cost.

ROI can be as simple or as complex as necessary for your program and/or organization, depending on what data is available and the type of ROI you want to calculate.

Why ROI?

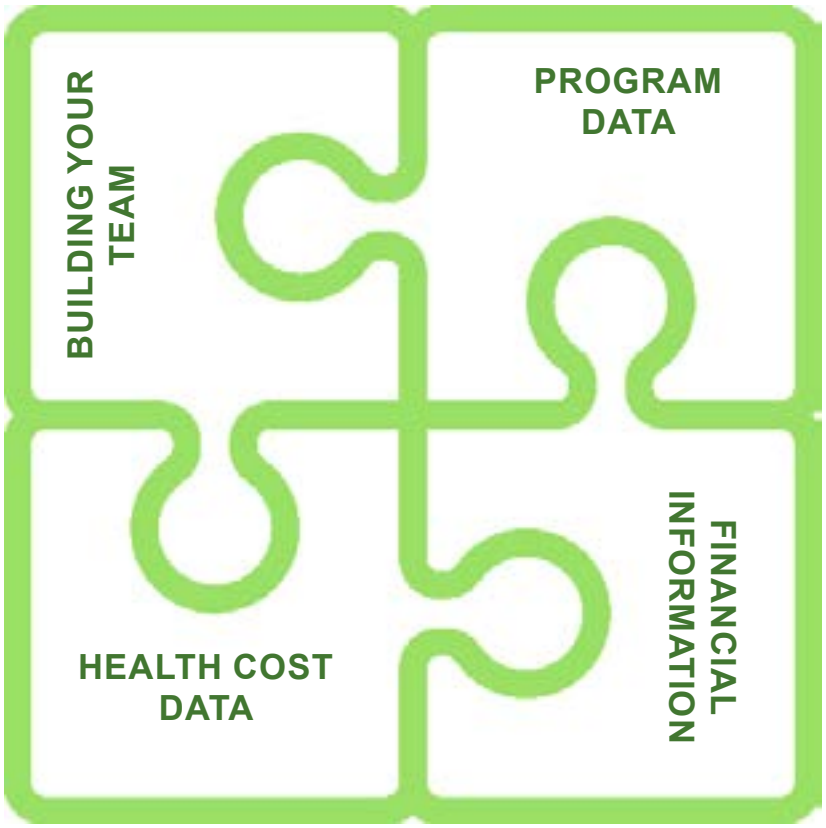
- It is a relatively easy to understand as a measure.
- It is versatile.
- ROI estimates direct financial impact.
- It is also the basic estimate of profitability.

KEY COMPONENTS OF ROI

We have identified some key components of calculating an ROI.

The key components to calculate ROI for your CHW program include:

1. Building the right team of individuals who can contribute information and data to the ROI process;
2. Identifying the program data and related health savings measures available for your program;
3. Including complete financial information or a program budget for your CHW program; and
4. Researching health cost data.



SECTION

2

GETTING STARTED WITH ROI

GETTING STARTED WITH ROI

Where are you? Do you have an existing CHW program for which you would like to calculate an ROI? Are you creating a new CHW program? Or, are you in the process of writing a grant? Where you are influences where you start in the ROI process and how you proceed.

HOW DO I CALCULATE AN ROI ON EXISTING PROGRAMS?

- The benefit of calculating an ROI for an existing CHW program is that you should already have data from your program outcomes.
- You should also have program financial information or a budget.
- The challenge of trying to calculate an ROI on existing programs is you are limited by the data you currently have.

I AM STARTING A NEW CHW PROGRAM. HOW SHOULD I THINK ABOUT ROI?

- If the CHW program you are starting was not designed with ROI in mind, but you have yet to begin implementation, there may be ways to tweak the process.
- Revisit the goals and outcomes of your project to see if you will have any measurable outcomes. Having specific, measurable health outcomes is ideal.
- You must review your evaluation process and data collection tools. Will your system allow you to capture the data you want?
- Another important component is reviewing your budget and determining how you will track expenses over time for this project. For ROI, you need clear information on program start-up costs and overhead as well as the overall budget and expenditures.

I AM WRITING A CHW PROGRAM GRANT. HOW SHOULD I THINK ABOUT ROI?

If you are starting fresh and writing a grant for a new program and wish to include ROI, it is important to lay the proper foundation.

As you are writing your grant, consider the following:

1. Include baseline or comparison group data for the health topic and program you are planning to implement. You may not be able to do something as complicated as having control groups, but you can ensure you have comparable data about populations or individuals who will not be participating in your program.

For example: You may be writing a grant to increase organ donation among a particular population (gender, age, ethnicity) in a three-county target region in your state. In preparing for your grant and before implementing the project, you can research baseline data in your target counties for organ donation among this population. You can also select an additional three counties with similar demographic makeups to serve as your comparison group. You would also need to research baseline data for organ donation for these counties as well.

2. Include measurable outcomes—preferably health outcomes. We realize not all CHW programs are designed to calculate ROI and should not be designed for the sole purpose of calculating ROI. CHWs meet very specific and important needs in the communities

they serve, and that should not be diminished for the sake of ROI. Also, realize many of the characteristics and components that make CHWs and their work unique are intangible and difficult to quantify. However, for those programs where more concrete, measurable outcomes can be included, it is helpful to do so. Researching and building assumptions for program impact and identifying related costs savings can be simpler with these types of outcomes.

3. As previously stated, it is important to include a complete budget, with start-up costs and overhead as you are writing your grant.
4. We will discuss the importance of building your team in the next section, but it is important to identify and engage this team early and often in the process of preparing for and calculating an ROI.

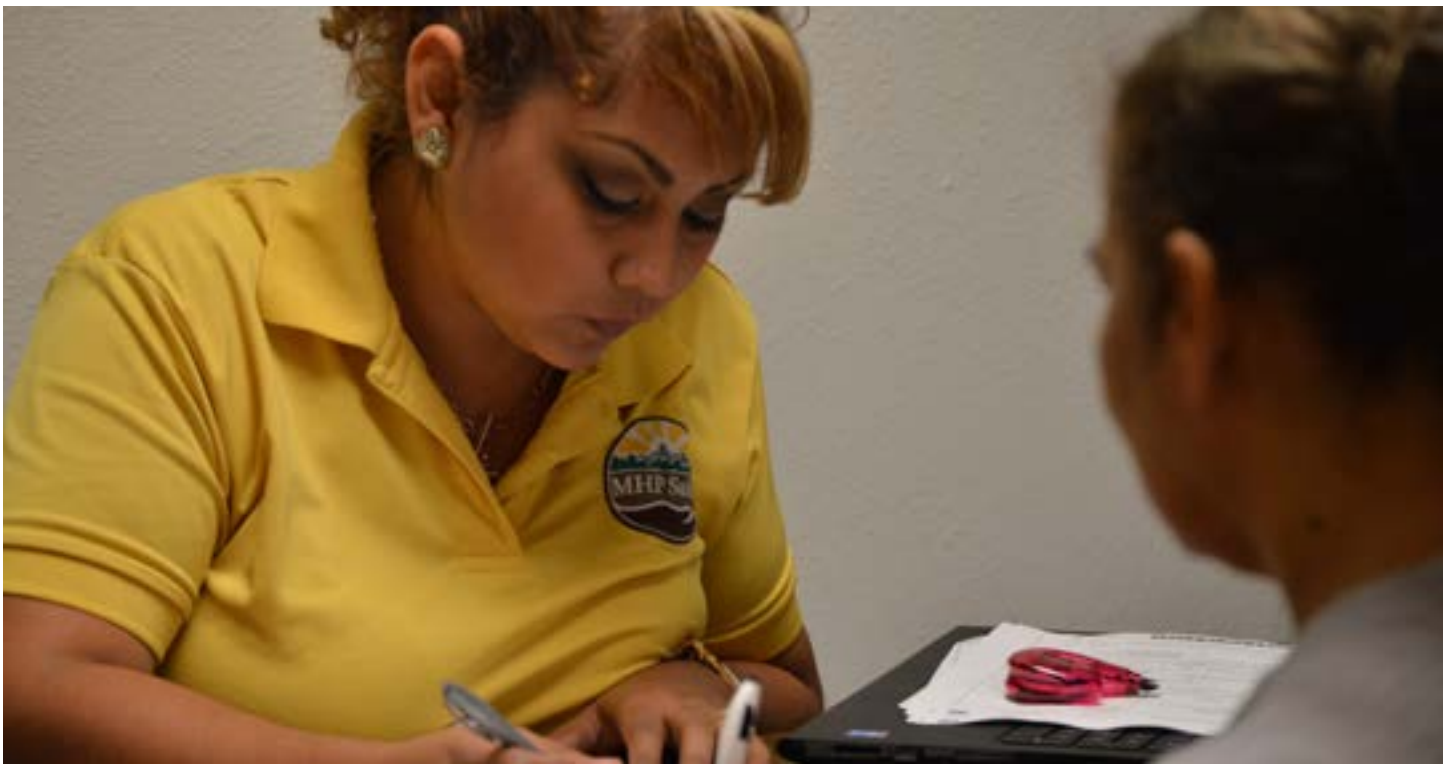
The strength of ROI analyses is understanding that there are multiple ways to get there, but the concept is the same.

Calculating ROI is not trying different numbers until you find something you like; it is showing that the more ways or variations you try, the stronger you make the argument.

REVIEW

Remember, ROI can be a simple and straight-forward process if you are prepared and have the right information and tools. Also, remember not everyone is ready to calculate ROI their first time. It can be a process. Above all, remember that calculating ROI is not impossible, and the goal of this toolkit is to help you do it.

Now that you have reviewed the information in this section, think about where you are in the process. Are you starting with a new program or are you interested in calculating ROI for an existing program? Use the flow chart to assess where you are and which parts of this Toolkit may be most useful to you.



SECTION

3

BUILDING YOUR ROI TEAM

WHO SHOULD JOIN YOUR TEAM?

Whether you are calculating ROI for a new or existing CHW program, taking the time to build and engage your team is one of the most important early steps.

Whom should you include? Ask yourself, "Who can make management decisions in my organization? Who understands the financial information or budget? Who understands my programs and program outcomes?"

Key Individuals to include on your team:

- CHWs
- Program Coordinator/Manager
- Senior Management (e.g., Nursing Manager, Medical Director)
- Business Office/Finance Staff
- Information Technology/Electronic Medical Record/Data Analyst

Each of these individuals has access to and understands different key pieces of information that contribute to an ROI calculation.

Talk to your team before, during, and after working through your ROI calculation to ensure you get a complete picture.

Refer to **Appendix A** to get started.

REVIEW

Including key individuals from your organization can make researching and calculating ROI much easier. Each individual brings different perspectives, strengths, and information to the table.

Appendix A was designed to help you begin building your ROI team and to guide you in thinking about what these individuals bring to the table and what questions you should be asking them.

SECTION

4

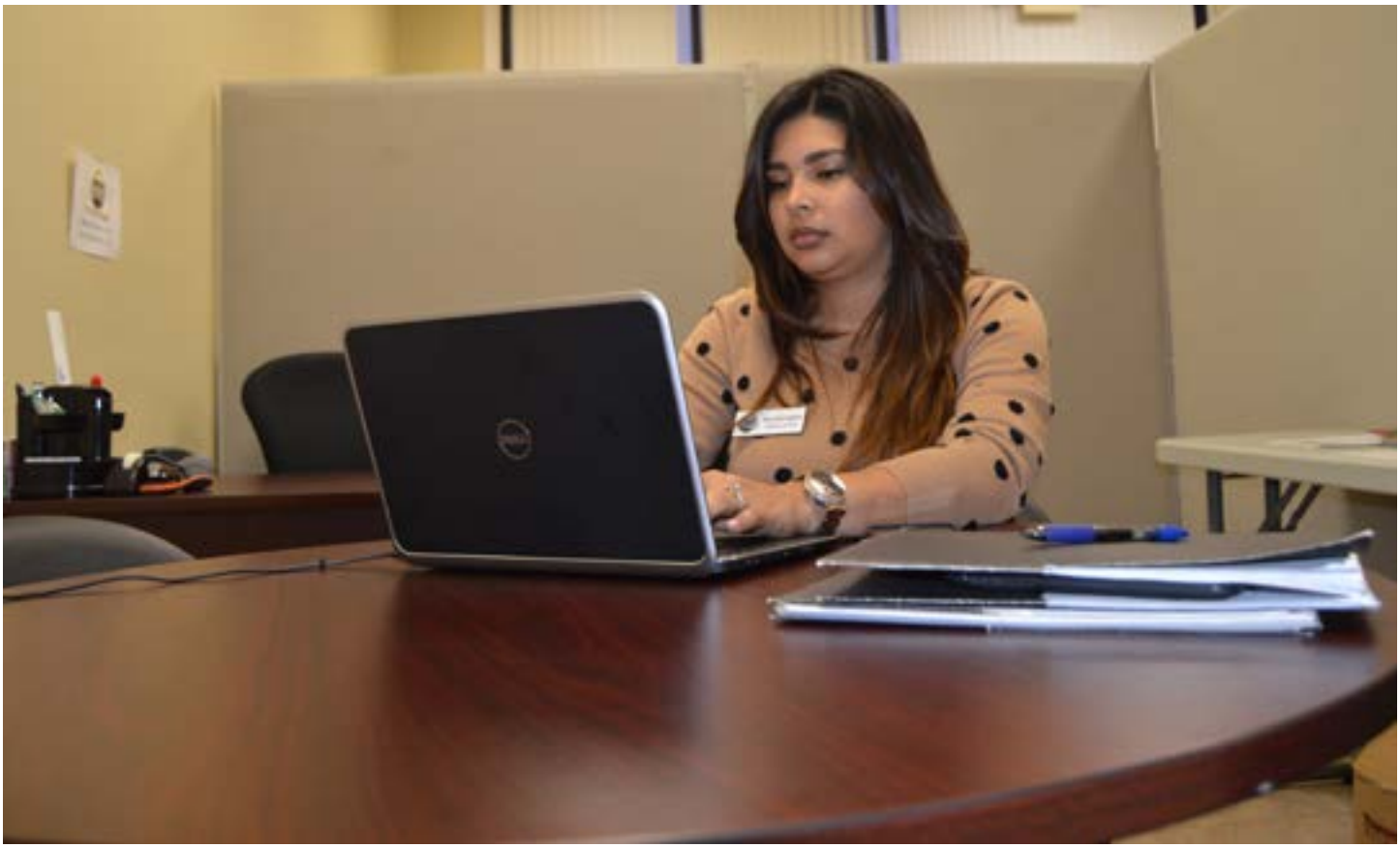
FINDING YOUR NUMBERS

WHERE ARE YOUR NUMBERS?

After building your team, the next step is pulling together your program data and outcomes.

Get started by asking yourself a few key questions about your data:

- Where do you get your program data?
- What type of data do you collect?
- What variables do you have?
- Where is it stored?
- Who has access?
- Who understands the outcomes?
- When did you collect it?
- What is the time frame you are focusing on for your ROI calculation?



WHAT DATA CAN BE USED?

Some key considerations for data:

- From how many sources will data be drawn?
- Are the same variables available for all patients involved?
- How frequently are data collection tools updated?
- Will the data being used fall under HIPAA regulations? If so, how will identifying information be protected?
- How far back (if retrospective) or into the future (if proactive) will data be included?
- What makes your data appropriate to calculate an ROI?

Not all CHW programs are designed with ROI in mind, and it may be difficult to calculate an ROI on the first try. Certain data are ideal for calculating ROI, while other data are not. "Count" data, like the number of health education materials distributed or the number of health messages heard on the radio, are difficult to correlate with changes in health outcomes, making these data more difficult to include in an ROI calculation. Measures like increases in exclusive breastfeeding or reductions in c-sections lead to more concrete health measures and can be more easily quantified and included in ROI.

If you do not have all the answers, ask your team. No one outside your organization can answer these questions. Data do not have to be perfect, but you should be able to defend your numbers. You have to be up front and be transparent about the assumptions you make. We will discuss this in the next section.

Refer to **Appendix B: Getting to Know your Data Worksheet** to assist you with this task.

MANAGING YOUR ASSUMPTIONS

Building key assumptions for your program data is key in calculating your program's ROI.

Begin by asking yourself, "what national or state level data comparables do I have that align with my program variables/data?"

- Utilizing state and national data is important when building these assumptions.
- Looking at industry or discipline-specific data can be useful as well.

Hospitals, diabetes-related associations or education units are good sources of this type of data.

Sometimes, you may not be able to find the exact comparable data you need for your calculation. Taking a component of a related measure could be useful in this case. For example, you may not be able to find specific data on kidney disease, but you may be able to find information/data on kidney function in diabetes literature.

The key to managing your assumptions is to disclose your assumptions and comparables throughout the process.

Say you would like to measure the community-level impact ROI of health insurance and benefits enrollment. A key aspect to explore would be researching the link between insurance status and avoidable hospitalizations. In this instance, you would want to measure changes in health care utilization based on health insurance status.

Sometimes, an ROI will be a range as opposed to a single number, depending on the assumptions you make. You must be clear about which data you can quantify and which data you are unable to quantify, and therefore exclude.

Think creatively but logically when you are making your assumptions and researching your comparables.

EXAMPLE DATA TO BUILD ASSUMPTIONS

Table 1 below contains examples of sources from websites and literature. The research you conduct and the sources you utilize to build your value estimate assumptions depend on the distinct makeup of your CHW program.

Table 1: Program Outcome Value Estimate Sources	
Outcome Value Estimate	**Source**
Preventable hospitalization and frequency data	Jiang, H.J. (AHRQ), Russo, C.A. (Thomson Reuters), and Barrett, M.L. (M.L. Barrett, Inc). "HCUP Statistical Brief #72: Nationwide Frequency and Costs of Potentially Preventable Hospitalizations, 2006" U.S. Agency for Healthcare Research and Quality.
Average values of benefits received for private insurance coverage	"Total Health Services – Percent of persons with an expense, mean expense per person with an expense, and distribution of expenses, by sources of payment, United States, 2010." Medical Expenditure Panel Survey. Agency for Healthcare Research and Quality. 2010.
Medicare spending	Troy TD and Wilson DM. "Health Coverage Cost Per Covered Life: Government vs. Employment Sponsored Programs." American Health Policy Institute. 2014.
Obesity definitions and patterns of health care spending based on BMI	Goldman DP, Zheng Y, Girosi F, et al. "The Benefits of Risk Factor Prevention in Americans Aged 51 and Older." Am J Public Health. 2009; 99: 2096:2101. Duchovny N, Baker C. "How does obesity in adults affect spending on health care?" Economic and Budget Issue Brief, Congressional Budget Office.

REVIEW

Fully understanding your program data is key for calculating an ROI. Crafting key assumptions and considerations about your data is also important for developing your ROI. You must be transparent about what assumptions you are making.

Now is the time to explore your outcome data in more detail and to begin making your assumptions. **Appendix B** is designed to walk you through the process of understanding your data. **Appendix C** guides you through the process of identifying and researching your program value estimates.

SECTION

5

GETTING TO KNOW YOUR FINANCIAL INFORMATION

GETTING TO KNOW YOUR FINANCIAL INFORMATION

Now that you have assembled your team, understand your program outcomes, and researched your assumptions about the value of the outcomes, next up is your financials. You must understand the cost of implementing the program that produced those results.

WHAT SHOULD YOU INCLUDE?

The point here is to include all your program's financial information.

What is your overhead?

- Do you have a federally approved overhead rate? This is a key piece of information your financial team will know.
- Does your organization have any allocation methods already used for overhead costs?
- Overhead can include things like rent or technology licenses.

Your state may require you to submit an allocation plan for various costs, or your financial department may have an allocation system that they use internally.

If your institution has received grants of any type, your grant writer may have developed a formula they use that may be useful for your project. You may find that your organization has more than one of these. You do not and should not use them all. Simply discuss which formula is best for this purpose and use it consistently.

What are your start-up costs?

- These will include any one-time costs incurred to get your program up and running.

Start-up costs may include recruitment, advertising, training, additional space, equipment, technology, or infrastructure expenditures.

Be sure to include any time utilized by existing staff to get this program up and running, including design and implementation time. This can be based on an estimate, actual time sheets, or a combination of both.

Do you know all the expenses included in your program?

- Remember, any costs already covered in overhead should not be included here, so ensure you have a clear understanding of what is and is not included in the overhead rate.
- Do not be afraid to ask multiple people, multiple times, in multiple ways to get a clear answer.
- Utilize your team here, because no one person can know everything.
- Direct costs are costs directly charged to a program or grant such as labor, supplies, and transportation.
- Depending on the program, your direct costs may be low. For example, salaries and benefits are usually the majority of the cost to run a program, with very few other items utilized.
- Think about whether a cost is truly an overhead cost or a direct programmatic cost, and ensure the cost only appears in your analysis once.

For example, a organization may have rented a suite of rooms to run a specific program. The rental cost of those rooms is a direct programmatic cost. However, there may be facility costs listed in overhead that relate to facilities, such as those used by the finance, IT, and general management departments that support the program as a whole (a portion of utility bill or equipment rental shared across programs).

Your finance department may have already developed a system to capture this. Do not reinvent the wheel; ask the appropriate person.

Start with brainstorming. Try to figure out where costs belong and why. Then, check this list against your monthly organizational and programmatic financials. This will show you if you have captured all the components that should be included in some way.

ADDRESSING INFLATION IN YOUR CALCULATION

It is also that important the numbers you include in your ROI calculation are adjusted for inflation. Programmatic costs can be adjusted using standard, federally set inflation rates for a given year.

Medical costs inflation is different. A good tool to use is the Medical Expenditure Panel Survey (MEPS),[1] which includes medical spending information at a national level.

Remember, you can make conservative and liberal estimates to create a range if you are concerned about accuracy or specificity.

As you move through the ROI calculation components, be sure to note all your assumptions, and state why certain things were done in a certain way. If you decide to revisit your ROI later, because you have additional data or wish to add additional years, you can do so while maintaining consistency and clarity.

REVIEW

Be sure to engage business office or financial staff in accessing and understanding your program budget. Remember, it is important to include a comprehensive budget that contains any overhead and start-up costs. Remember to account for inflation (and medical inflation) when appropriate.

Because everyone's program budgets will be different, there is no specific appendix item designed for this section. Work with the systems and tools at your disposal in your organization to explore and understand your full program budget.

SECTION

6

TYPES OF ROI

TYPES OF ROI

Determining the true “return” is a key consideration that brings up some foundational questions:

- Who is the target population being reached?
- Who, exactly, is benefiting from our program?
- How can this impact be isolated and measured?

You must be clear on what type of ROI you are calculating.

WHAT TYPES OF ROI ARE YOU CALCULATING?

In this process, it is important to understand that there are different types of ROI calculations for CHW programs, depending on which group received the benefit or impact from your program.

Community Level: How is the community impacted by a program?

For example, you can calculate the ROI of preventable hospitalizations.

Institutional Level: How much was the clinic or network impacted? This may look at direct profits brought in from a particular program.

For example, you can calculate decreased incidence of c-section rates and associated savings in c-section related costs.

Individual Level: How much did individual patients or consumers benefit from the program? The emphasis here is on the value of services received and/or projected productivity outcomes.

For example, you can calculate the decrease in blood pressure of an individual, which may decrease costs related to medication the individual is required to take. Additionally, you can calculate the value of the number of sick days prevented for the individual, because they do not have to miss work due to their illness.

The same measure can be used for multiple types of ROI, depending on the other measures and criteria used in its computation.

For example, you can revisit the decrease in blood pressure of an individual and associated number of sick days prevented to measure savings for the company they work for by them not missing work. By adding different components, you can compute a measure for all three levels, if you wish.

SECTION

7

SOURCING HEALTH CARE COST DATA

HOW DO I BEGIN SOURCING HEALTH COST DATA FOR MY ROI?

Begin with the data and variables available to you from your program and the assumptions you made about that data earlier in the process.

The point of this exercise is to research health care cost data to compare to your program's cost savings that were calculated earlier.

Again, look to state and national data and research for this information; looking at industry or discipline-specific data can be useful as well.

Refer to **Appendix D** to build health care cost data for your ROI.

Table 2: Health Care Cost Sources by Topic

Health Care Cost Topic	Source
Uninsured	Hadley J. "Sicker and Poorer: The Consequences of Being Uninsured. A Review of the Literature." An initiative of the Henry J. Kaiser Family Foundation. 2002.
Medicare & Medicaid	"Current Status of State Medicaid Expansion Decisions," The Henry J. Kaiser Family Foundation, 2016.
CHWs and the ACA	Islam N, Nadkarni SK, Zahn D, et al. "Integrating Community Health Workers within Patient Protection and the Affordable Care Act Implementation." J Public Health Manag Pract. 2015 Jan-Feb; 21(1):42-50.
State Innovation Models	"State Innovation Models Initiative: General Information," Center for Medicare and Medicaid Services, 2015.
Economic cost of diabetes	"Economic Costs of Diabetes in the U.S. in 2012." Diabetes Care. American Diabetes Association. 2013, April. 36:1033-1046.
A1c control	Juarez DT, Goo R, Tokumaru S, et al. "Association Between Sustained Glycated Hemoglobin Control and Healthcare Costs." Am J Pharm Benefits. 2013; 5.2: 59-64.

Obesity	• Flegal FM, Carroll MD, Ogden CL, et al. “Prevalence and trends in US obesity among adults, 1999-2008.” JAMA. 2010; 303.3:235-241. • Thompson D, Edelberg J, Colditz GA, et al. “Lifetime health and economic consequences of obesity.” Arch Intern Med. 1999; 159.18: 21777-2183. • Thompson D, Brown JB, Nichols GA, et al. “Body mass index and future healthcare costs: a retrospective cohort study.” Obes Res. 2001; 9.3:210-218.
Spending by medical condition	Roehig C, Miller G, Lake C, et al. “National Health Spending by Medical Condition, 1996-2005.” Health Aff (Millwood). 2009; 28.2:w358-67.

SECTION

8

CALCULATING ROI

CALCULATING ROI

All of your preparation and research now means you are ready to calculate your return on investment (ROI).

Before you move forward, ensure the following statements are accurate:

- I satisfied all the key components for ROI calculation.
- I built my team, and everyone has contributed.
- I know my program outcomes/data, and I have clearly stated my assumptions.
- I know my complete financials/budget.
- I have researched and have relevant and comparable health cost data.

If all of the above are true, then you are ready to calculate ROI!

Remember, ROI is simply the benefit received divided by the program cost.

$$\text{ROI} = \frac{\text{BENEFITS RECEIVED}}{\text{PROGRAM COST}}$$

SECTION

9

HEATH CENTER EXAMPLE

HEALTH CENTER EXAMPLE

Now that you have seen the ROI calculation process, this section shows you what this process looks like in practice. The following pages explore the ROI research and calculation method for a health insurance enrollment program utilizing CHWs in California.

INTRODUCTION

California Health Center X was one of four Federally-Qualified Health Centers selected to participate in MHP Salud's CHWs Makes Cents ROI Pilot program. We chose this Health Center because they had experience with HRSA and other funders. They also had experience implementing and managing larger CHW programs.

Though California Health Center X has numerous CHW programs, we chose to focus on their CHW health insurance enrollment program for this ROI calculation. Health Center X has had their insurance enrollment plan since the first Patient Protection and Affordable Care Act (ACA) enrollment period for Covered California, the state's health insurance marketplace.[2]

DATA COLLECTION

We worked with key staff from California Health Center X over a number of weeks to collect information and understand their program, their program outcomes, and their program budget. For this ROI pilot, we used outcome data from the first and second Covered California enrollment periods. These dates included October through December of 2013 and November and December of 2014.

Program outcomes reported for these time periods included consumer enrollments by CHWs in Medi-Cal, Covered California, Anthem Blue Cross, and Medicare. Specific data was available about individual consumer visits with the program's CHWs.

UNDERSTANDING THE DATA

After we received and organized the program data from Health Center X, we analyzed it. We conducted research to look for any program outcome value estimates that could be related to individual consumers enrolling in health insurance. We also looked for program outcome value estimates for the communities served by Health Center X. We wanted to be able to calculate ROI for the individual as well as for the community.

The table below highlights the program outcomes for individuals enrolled in health insurance though Health Center X's program from 2013 and 2014. It shows the number of individuals enrolled in each type of insurance for both years as well as overall totals. A total of 4,128 consumers were enrolled in some type of heath insurance by Health Center X's CHWs during this time period.

Covered California individuals enrolled by Health Center X, 2013-2014				
Enrollment outcome	**2013**	**2014**	**Total**	**Total %**
Medi-Cal	1,736	309	2,045	34.36%
Covered California	545	868	1,413	23.74%
Anthem Blue Cross	53	357	410	6.89%
Total private insurance	598	1,225	1,823	30.63%
Medicare	57	203	260	4.37%

USING DATA TO BUILD OUR ASSUMPTIONS

Using the program outcomes we selected in the previous step, we conducted research to look for sources and data points related to those outcomes. These allowed us to begin to define the program outcome value estimates. The table below highlights the program outcome value estimate sources we used. One key point we wanted was cost-savings data per preventable hospitalization. Remember, it is a good idea to use a variety of sources to build your assumptions and to be specific and clear about the assumptions you make.

Program Outcome Value Estimate Sources for Health Center X	
Outcome Value Estimate	**Source**
Data on preventable hospitalizations	Trends in Avoidable Hopspitalizations[3] Statistical Brief #178: Geographic Variation in Potentially Preventable Hospitalizations for Acute and Chronic Conditions, 2005-20115[4] MMWR Potentially Preventable Hospitalizations[5]
Preventable hospitalization and frequency data	Healthcare Cost and Utilization Project (HCUP)[6]
Medicare- and Medicaid-eligible patients in California	MMRR Medicare-Medicaid Eligible Beneficiaries and Potentially Avoidable Hopsitalizaitons[7]
Avg. values of benefits received for Medi-Cal coverage	California Department of Health Care Services Annual Budget[8]
Avg. values of benefits received for private insurance coverage	Medical Expenditure Panel Survey (MEPS)[9]
ACA premium coverage	ACA Coverage Estimate[10] ACA Impact on Per Capita of Health Care[11] Health spending post-Obamacare[12]
Medicare spending	American Health Policy Institute[13]

Some additional assumptions we made about the data and outcomes based on our program outcomes value estimate research were:

- 90 percent of enrollees followed through on premium payments.
- Uninsured individuals had a 30 to 50 percent increased risk of avoidable hospitalizations. We used this assumption to calculate our upper and lower estimates of cost savings related to preventable hospitalizations.
- Health insurance benefits resulting from Health Center X's CHW program lasted for one year.

CALCULATING AVOIDABLE HOSPITALIZATIONS

We used the program enrollment outcomes and information from our program outcome value estimates to calculate estimated change in avoidable hospitalizations over the next year as a result of health insurance enrollment. We estimated this separately for privately insured and for Medicare- and Medicaid-eligible patients. The table below shows these estimates. The upper and lower estimates of 50 and 30 percent were used to create a range of realistic outcomes.

Estimated changes in avoidable hospitalizations (AH) based on enrollments, 2013-2014			
Privately insured	*2013*	*2014*	*Total*
Consumers Enrolled	598	1,225	1,823
90% adjustment (assumption)	538	1,103	1,641
Risk of AH per 1,000 patients	18.5	18.5	18.5
30% reduction (assumption)	14.2	14.2	14.2
50% reduction (assumption)	12.3	12.3	12.3
Medicare/Medicaid eligible			
90% adjustment (assumption)	1,793	512	2,305
Risk of AH per 1,000 patients	1,614	461	2,075
30% reduction (assumption)	59	59	59
50% reduction (assumption)	45.4	45.4	45.4
90% adjustment (assumption)	39.3	39.3	39.3

Next, we calculated cost savings per avoidable hospitalization. The results are shown in the table below.

The average cost savings related to avoidable hospitalizations for the general population are very similar to those of Medicare- and Medicaid-eligible consumers. This is the case despite the different estimate sources we used for different years. Medicare enrollment resulted in the highest average annual benefits per individual enrolled.

Summary of avoidable hospitalization (AH) cost savings (adjusted for inflation to 2014 USD)					
Service	**Medi-Cal**	**Medicare**	**Private Ins.**	**AH (general)**	**AH (MME)**
Gross estimate	1,652.37	10,830.00	1,130.71	7,341.23	8,783.00
Unit	2013 USD	2012 USD	2010 USD	2006 USD	2009 USD
Inflation factor	1.047	1.085	1.174	1.411	1.22
2014 USD, adj. (Average Annual Benefit/ Individual Enrolled)	1,730.03	11,750.55	1,327.45	10,358.48	10,715.26

So far in our research and preparation to calculate ROI for Health Center X's CHW program, we have:

- Decided which program outcomes were useful for ROI;
- Researched program outcome value estimates;
- Made our assumptions; and
- Calculated costs savings for preventable hospitalizations as a result of health insurance enrollment.

Now, we move on to explore the budget for Health Center X's program.

UNDERSTANDING THE FINANCIALS

Health Center X's business office gathered financial/budget information related to program years 2013 and 2014. Budget costs included: salary and benefits (including retirement), outreach supplies, event space rental, communication, mileage and vehicle repair, insurance, promotional, and some training.

We received a detailed budget with line items for each of these costs, but in this example, we have summarized this information.

BUDGET SPECIFICS AND ASSUMPTIONS

Approximately 76 percent of all costs were directly related to wages for staff. Program costs in Year 2 were less than in Year 1's. The table below is a summary of Health Center X's enrollment program expenses for 2013 and 2014.

Health Center X Enrollment Program Expenses (adjusted for inflation to 2014 USD)				
Category	**2013**	**Adj. 2013***	**2014**	**Total**
Salaries	99,793.49	101,410.14	68,208.74	169,618.88
Benefits	22,966.16	23,338.21	14,725.38	38,063.59
Retirement	2,074.79	2,108.40	1,393.33	3,501.73
Supplies	3,985.06	4,049.62	366.41	4,416.03
Space rental	60.00	60.97	0.00	60.97
Communications	762.09	774.44	371.48	1,145.92
Mileage	3,432.15	3,487.75	356.56	3,844.31
Misc. transportation	647.64	658.13	194.84	852.97
Insurance	409.74	416.38	299.32	715.70
Training	48.99	49.78	38.19	87.97
Promotions	678.21	689.20	0.00	689.20
Total	**$134,858.32**	**$137,043.02**	**$85,954.25**	**$222,997.27**

*2013 costs adjusted to 2014 USD

SOURCING HEALTH COST DATA

Now that we understand our program budget, it is time to research health care cost data related to the program and its outcomes. This lets us compare cost savings related to program outcomes and costs per consumer if they do not have health insurance. We are looking at health care costs for hospitalizations that could have been prevented if the consumer had had health insurance. The table below contains health care costs and sources related to the outcomes addressed by Health Center X's CHW Program.

Health Care Cost Sources by Type for Health Center X	
Health Care Cost	**Source**
Uninsured	The Consequences of Being Uninsured[14]
Medicare & Medicaid	Current Status of State Medicaid Expansion Decision[15]
CHWs and the ACA	Integrating CHWs within Patient Protection and the Affordable Care Act Implementation[16]
State Innovation Models	CMS State Innovation Models Initiative[17]

CALCULATING ROI

Now that we have worked though all the preparation steps, we are ready to calculate ROI!

Final ROI values for California Health Center X's CHW health insurance enrollment program were determined by dividing the sum of the program value by the overall program cost.

First, the sum of health care benefits was used. Then, we estimated reduction in health care spending over one full year. ROI was then calculated for each outcome type, for each enrollment period, and for the overall duration of the program to date (2013/2014).

We used two different methods to calculate Health Center X's ROI:

1. Estimated reduced health care utilization based on changes in avoidable hospitalizations for insured and uninsured populations and
2. Analyzed benefits received by newly-enrolled individuals.

This table combines enrollment data, assumptions, and cost-savings data from previous tables to calculate ROI. Remember, because we had an upper estimate and a lower estimate, this ROI will be a range.

From the lowest ROI estimate of 1.35 in 2014 to the highest ROI estimate of 2.73 in 2013, the resulting ROI rage is a return of $1.35 - $2.73 per dollar invested.

Health Center X projected health care cost reduction ROI, 2013-2014			
Year	2013	2014	Total
Privately Insured	598	1,225	1,823
AH risk*	18.5	18.5	18.5
30% reduction	14.2	14.2	14.2
50% reduction	12.3	12.3	12.3
AH Cost	$10,358.48	10,358.48	10,358.48
Savings (30%)	$23,800.68	48,755.57	72,556.25
Savings (50%)	$34,378.76	70,424.72	104,803.48
Medicare/Medicaid Eligible	1,793	512	2,305
AH risk*	59	59	59
30% reduction	45.4	45.4	45.4
50% reduction	39.3	39.3	39.3
AH Cost	$10,715.26	10,715.26	10,715.26
Savings (30%)	$235,426.54	67,227.21	302,653.76
Savings (50%)	$340,060.56	97,105.97	437,166.54
Total			
Savings (30%)	$259,227.22	115,982.78	375,210.01
Savings (50%)	$374,439.32	167,530.69	541,970.01
Program Cost	$137,043.02	85,954.25	222,997.27
ROI (30%)	**1.89**	**1.35**	**1.68**
ROI (50%)	**2.73**	**1.95**	**2.43**

RESULTS: COMMUNITY-LEVEL ROI

While the program year and assumed reduction in preventable hospitalizations presented a range of ROI from $1.35 to $2.73, all outcomes were above $1.00, meaning there was some return on investment indicated at all levels of this calculation.

Private insurance enrollment resulted in an estimated $73,000 to $105,000 of total savings in healthcare expenditures, while federal and/or state insurance programs resulted in $303,000 to $437,000 total savings as illustrated in the table on the previous page.

RESULTS: ROI FOR THE INDIVIDUAL

The overall return to each consumer for each dollar spent by California Health Center X on its CHW program was $36.38. This can be interpreted as the value of Health Center X's insurance enrollment program to individuals seeking health care services, though not necessarily value added to the community as a whole.

This return was significantly higher in 2013 ($47.60 per dollar invested), when overall enrollment numbers remained similar despite a reduction in salary expenditures. Medi-Cal enrollments were the greatest factor in the first year's program value, while private insurance and Medicare were larger contributors in 2014. These difference are illustrated in the table on the following page.

Summary of benefits received per dollar invested, 2013-2014			
Enrollment Program	**2013**	**2014**	**Overall**
Medi-Cal			
Gross Number	1,736	309	2,045
90% Adjustment	1,562	278	1,841
2014 USD Benefits	1,730.03	1,730.03	1,730.03
Total Benefits Received	2,702,998.87	481,121.34	3,184,120.22
Medicare			
Gross Number	57	203	260
90% Adjustment	51	183	234
2014 USD Benefits	11,750.55	11,750.55	11,750.55
Total Benefits Received	602,803.22	2,146,825.49	2,749,628.70
Private Insurance			
Gross Number	598	1,225	1,823
90% Adjustment	538	1103	1641
2014 USD Benefits	1,327.45	1,327.45	1,327.45
Total Benefits Received	714,433.59	1,463,513.63	2,177,947.22
Overall Benefits Received	**$4,020,235.68**	**$4,091,460.45**	**$8,111,696.13**
Overall Program Cost	**$137,043.02**	**$85,954.25**	**$222,997.27**
Final ROI	**$29.34**	**$47.60**	**$36.38**

HEALTH CENTER X'S ROI FINDINGS SUMMARY

The results of Health Center X's ROI for their CHW Health Insurance Enrollment program is evidence that CHW programs have a positive financial impact on the individuals and communities they serve.

Overall reductions in health care spending: $1.68-2.43

Benefits received by target population: $36.36 (avg)

These are encouraging results, even given these key assumptions:

- We decided to exclude value of enrollments into services, such as sliding-fee scale and pharmacy agreements, as well as the value of secondary assistance like translation services and other referrals. We made these decisions to exclude this data to have a more simplified ROI for the first calculation. If we revisited the ROI, these additional services could be added back in.

- Benefits were only estimated over one year after enrollment in health insurance.

- We also assumed changes in healthcare spending after insurance enrollment.

SECTION

10

CONCLUSIONS

APPLICATIONS

Now that you are comfortable with the ROI process, you can take this concept/process and apply it to other programs.

- Revisit your ROI, and add more complexity to it.
- Calculate ROI for a different audience.
- If you calculated for the individual your first time, go back and revisit your ROI calculation for your organization or for the community.
    - Are there more variables you can include and explore?
    - Are there additional years you want to add?

All programs are unique, but ROI ranges are comparable.

What can you learn from your ROI?

- How is your data being used and by whom?
- How can you improve your data collection process or the tools you use to collect data?
- Is the data being collected by your CHWs being incorporated into your Health Center's EMR?
- Is the provider seeing it?
- How do I improve my program going forward?
- Does this ROI tell me about other programs I am implementing or considering implementing?

ROI results should not be viewed as a direct evaluation of program effectiveness, but rather as a tool for comparing between program sizes, types, and environments.

SECTION

10

FREQUENTLY ASKED QUESTIONS

CAN ANYONE CALCULATE ROI?

As long as you have access to all the key pieces of information, anyone can calculate ROI.

CAN I STILL CALCULATE ROI IF I DON'T HAVE A COMPLETE "ROI TEAM"?

While we recommend having a team, because it makes the ROI calculation process easier by pulling together expertise and data from various areas, it is not required.

WHAT IF I DON'T HAVE ANY DATA OR MY DATA IS VERY LIMITED?

If you are just starting a program and have little to no data, use this ROI Toolkit as a guide to strengthen your data collection process. You should review what types of data you will be collecting, how you are collecting it and the time frame. Keep in mind, some types of data are easier to incorporate into ROI than others. You can always refer to MHP Salud's **Evaluation Toolkit** and **Program Database and User Guide** to help you learn about CHW program data and evaluation.

WHAT IF I HAVE "BAD" DATA OR DATA WHERE THERE IS MISSING VALUES?

Not everyone will be able to calculate ROI their first time in the process. This toolkit can serve as a starting point to guide you in the right direction. Calculating ROI is a process, and ensuring you have enough data that can be tied to health outcomes is a key factor in calculating ROI. So wherever you find yourself, there is a path forward.

IS MY ROI VALID?

Remember, making assumptions for your program data is key in building your ROI calculation. You must be up front and transparent about what data you can quantify and what data you are unable to include in your ROI calculation. If you have odd ROI results, such as a negative ROI or a very large ROI number, these may be indicators that you should revisit what you included or excluded in your ROI assumptions/calculations.

HOW OFTEN DO YOU CALCULATE ROI?

How often you calculate or recalculate depends on yours goals. You can always revisit your ROI to build in complexity or even to calculate a different type of ROI. In general, though, ROI should be revisited annually to ensure your calculation stays relevant.

I HAVE AN ROI, WHAT SHOULD I DO NOW?

In addition to revisiting your ROI to build in complexity or to calculate a different ROI type, it is important to share your results! Share your ROI internally with your ROI team as well as others within your organization.

It is also important to share it externally to help build the literature and support for the CHW model. Share it with your board of directors, submit abstracts to local, state, and national conferences. You can also submit an abstract to have your ROI findings published. It can even be as simple as sharing it on your website or through your social media. The important thing is to continue growing this body of evidence and work.

HOW DO I ADDRESS THOSE "UNQUANTIFIABLE" ASPECTS OF CHW PROGRAMS WITHIN MY ROI?

ROI can only capture costs savings related to specific, quantifiable outcomes. This is a challenge with CHW programs when it is hard to define and quantify those "other" key aspects of the work CHWs do. One thing we can do is to strive to develop tools and metrics to capture these qualities of CHW programs. Complimenting your ROI with qualitative data is another way to emphasize the unique aspects and contributions of CHWs. Until we are able to capture and quantify these through ROI, our ROI calculations for CHW programs will always be conservative estimates of their impact.

HOW DO I KNOW MY CHWS ARE MAKING THE IMPACT SEEN IN MY ROI?

This relates to the key assumptions you build into your ROI, the data your program is capturing, and the related cost-savings estimates you make. When trying to measure impact of a specific program in a specific area, research whether there are comparison groups or data available to show impact and change by your program. Did the three counties in your target area see a bigger improvement on some key health metrics compared to similar, surrounding counties that did not participate in your program or receive the intervention?

I NEED MORE HELP CALCULATING MY ROI.

If you feel you need additional guidance to calculate your ROI, or if you have other questions you would like answered, do not hesitate to reach out to MHP Salud at info@mhpsalud.org or 800-461-8394. We offer free training and technical assistance to Federally-Qualified Health Centers through funding from the Health Resources and Services Administration.

WORKS CITED

1. "Total Health Services – Percent of persons with an expense, mean expense per person with an expense, and distribution of expenses, by sources of payment, United States, 2010." Medical Expenditure Panel Survey. Agency for Healthcare Research and Quality.
2. Covered California. Available at http://www.coveredca.com/
3. Kozak LJ, Hall MJ, Owings MF. "Trends in Avoidable Hospitalizations." Health Affairs, March/April 2001; 20.2:225-32.
4. Torio CM and Andrews RM. "Geographic Variation in Potentially Preventable Hospitalizations for Acute and Chronic Conditions, 2005-2011." Healthcare Cost and Utilization Project. Agency for Healthcare Research and Quality. September 2014. Available at http://www.hcup-us.ahrq.gov/reports/statbriefs/sb178-Preventable-Hospitalizations-by-Region.pdf
5. Moy E, Chang E, and Barrett M. "Potentially Preventable Hospitalizations – United States, 2001-2009." Morbidity and Mortality Weekly Report (MMWR). Centers for Disease Prevention and Control. 2013, Nov. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/su6203a23.htm
6. Jiang, H.J. (AHRQ), Russo, C.A. (Thomson Reuters), and Barrett, M.L. (M.L. Barrett, Inc). "HCUP Statistical Brief #72: Nationwide Frequency and Costs of Potentially Preventable Hospitalizations, 2006" U.S. Agency for Healthcare Research and Quality. Available at http://www.hcup-us.ahrq.gov/reports/statbriefs/sb72.pdf.
7. Segal M, Rollins E, Hodges K, et al. "Medicare-Medicaid Eligible Beneficiaries and Potentially Avoidable Hospitalizations." Medicare & Medicaid Research Review (MMRR), 2014; 4.1. Available at http://www.cms.gov/mmrr/Downloads/MMRR2014_004_01_b01.pdf
8. "Medi-Cal May 2014 Local Assistance Estimate for Fiscal Years 2013-14 and 2014-15." State of California Department of Health Care Services. 2016. Available at http://www.dhcs.ca.gov/dataandstats/reports/mcestimates/Pages/may_2014_estimates.aspx
9. "Total Health Services – Percent of persons with an expense, mean expense per person with an expense, and distribution of expenses, by sources of payment, United States, 2010." Medical Expenditure

Panel Survey. Agency for Healthcare Research and Quality. 2010. Available at http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/hc/state_expend/2010/table1.htm

10. John A, "We Finally Know How Many People Paid for Obamacare." The Wire. 2014, Sept. Available at http://money.cnn.com/2014/05/07/news/economy/obamacare-premiums/
11. Farley F. "ACA Impact on Per Capita Cost of Health Care." FactCheck.Org: The Wire. 2014, February. Available at http://www.factcheck.org/2014/02/aca-impact-on-per-capita-cost-of-health-care/
12. Mangan D. "Health spending post-Obamacare seen 2.5 trillion lower." CNBC: Healthcare. 2015, April. Available at http://www.cnbc.com/id/102570162
13. Troy TD and Wilson DM. "Health Coverage Cost Per Covered Life: Government vs. Employment Sponsored Programs." American Health Policy Institute. 2014. Available at http://www.americanhealthpolicy.org/Content/documents/resources/AHPI_STUDY_Cost_Per_Covered_Life.pdf
14. Hadley J. "Sicker and Poorer: The Consequences of Being Uninsured. A Review of the Literature." An initiative of the Henry J. Kaiser Family Foundation. 2002. Available at https://kaiserfamilyfoundation.files.wordpress.com/2013/01/briefing-charts.pdf
15. "Current Status of State Medicaid Expansion Decisions," The Henry J. Kaiser Family Foundation, 2016. Available at http://kff.org/health-reform/slide/current-status-of-the-medicaid-expansion-decision/
16. Islam N, Nadkarni SK, Zahn D, et al. "Integrating Community Health Workers within Patient Protection and the Affordable Care Act Implementation." J Public Health Manag Pract. 2015 Jan-Feb; 21(1):42-50.
17. Center for Medicare and Medicaid Services, "State Innovation Models Initiative: General Information", 2015. Available at http://innovation.cms.gov/initiatives/state-innovations/.

MORE RESOURCES

OTHER ROI RESOURCES

- Denver/Molina Study: Whitley EM, Everhart RM, Wright RA. “Measuring return on investment of outreach by community health workers”. Journal of Health Care for the Poor and Underserved. 2006 Feb;17(1 Suppl):6-15.

- Rush, CH. “Return on investment from employment of community health workers.” Journal of Ambulatory Care Management. 2012 Apr-Jun;35(2):133-7. Redding S, Conrey E, Porter K, Paulson J, Hughes K, Redding M.

- “Pathways community care coordination in low birth weight prevention.” Maternal and Child Health Journal. 2015 Mar;19(3):643-50. doi: 10.1007/s10995-014-1554-4.

- MHP Salud. “Brief Report: ROI Analysis of CHW Programs” 2015. Accessed at http://mhpsalud.org/portfolio/full-brief-report-use-of-return-on-investment-analysis-with-chw-programs-2/

APPENDICES

Appendix A: Building Your Team

Instructions: Utilize this form to build your ROI team.

Building Your Team			
Area of Expertise	**Team Member**	**Information Data they bring to the table**	**Key Questions to ask them?**
Who understands your program and your program outcomes, program data? (Potentially your CHWs, Program Coordinator and/ or Program Manager			
Who makes management decisions for the organization and/or program? (Potentially a Nursing Manager or Medical Director)			
Who understands your program budget or program finances? (Potentially someone from your business office or in Finance)			
Who has access to your data? (Potentially an IT person, EMR Manager, or Data Analyst)			

Appendix B: Getting to Know Your Data

Instructions: This tool will guide you to understanding your outcomes data a little better. Work through the following questions for each of the program outcomes you are considering including in your ROI.

Program Outcome: Identify and state one of your program outcomes	
Key Measures	What data is being collected or will be collected that you can use to demonstrate program impact for this outcome?
Database	How is your data collected? Where is it stored? How is it organized? Do you have access?
Data Range	For what date ranges are these key measures available? Was data collected consistently for these measures over this date range?
Comparison Group and/ or Baseline Data	Do you have a comparison group or baseline data for any of these key measures? How were baseline levels and expected outcomes decided? Will you be able to use internal data such as patient history or external data or research to “create” a comparison group?
Notes:	Do you have any other concerns about this outcome or data that should be considered?
Program Outcome #1:	
Key Measures	
Database	
Data Range	
Comparison Group and/ or Baseline Data	

Notes:	
Program Outcome #2:	
Key Measures	
Database	
Data Range	
Comparison Group and/ or Baseline Data	
Notes:	
Program Outcome #3:	
Key Measures	
Database	
Data Range	
Comparison Group and/ or Baseline Data	
Notes:	

Appendix C: Creating Program Value Estimates

Instructions: Use this tool to work through managing your assumptions and researching program value estimates. The Key Program measures are identified in **Appendix B**. For assumptions, answer the question: What key assumptions are you making about the data/outcomes? The data source can be internal or external.

Program Outcome	Key Measures	Assumptions	Value Estimates	Source

Appendix D: Identifying Health Care Costs

Instructions: Use this tool to being identifying health care costs. These should relate to the program value estimates you identified in **Appendix C**.

Health Care Cost	Source	Notes

mhpsalud.org

DESIGN BY: überflip

This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under cooperative agreement number U30CS09744, Technical Assistance to Community and Migrant Health Centers and Homeless for $617,235.00 with 0% of the total NCA project financed with non-federal sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.