THE PRACTITIONER'S GUIDE TO
COST ANALYSIS

FIRST STEPS

& Cost Analysis Case Study from Children's Trust Fund of Missouri

1 Creating Stakeholder Buy-in

2 Data Collection and Processing

3 Communicating and Using Results

Produced by the University of Kansas Center for Public Partnerships & Research for the FRIENDS National Center for Community-Based Child Abuse Prevention

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Introduction

Every provider working in the field of child abuse and neglect prevention has stories of families whose lives have been changed for the better. Anecdotally, it's clear that prevention programs are a sound investment in the health and well-being of children, families, and the larger community. What's less clear, however, is the **actual economic impact** of child abuse and neglect prevention.

What are the true costs of prevention programs, and the benefits?
How do costs compare to other interventions with similar goals?
What costs are we avoiding down the road by doing prevention work now?

To answer these kinds of questions of efficiency and impact, organizations can use Cost Analysis (CA). More common in the business and medical fields, CA is gaining traction among social service programs as a tool for capturing the monetary value of resources used to deliver services. CA can greatly assist in assessing a program's efficiency and advocating for continued funding.

In 2015, the University of Kansas Center for Public Partnerships and Research interviewed Community-Based Child Abuse Prevention (CBCAP) leads in ten states to better understand the use of CA in CBCAP programs. Interview selection was determined by a state's readiness for CA, as defined by the following: experience with CA, employment of robust evaluation practices, established public-private partnerships, and engagement in sustainability planning.

The substance of those interviews, as discussed in this guide, sheds light on both the challenges and potential benefits of CA for CBCAP programs. Perhaps not surprisingly, a central theme emerged: the importance of readiness. Readiness was discussed both in terms of being unsure about whether they were ready, and sometimes learning that they were not as ready as they

thought they were. For this reason, we chose to focus this CA guide on the first, and often overlooked, steps that prepare an organization for readiness to begin a cost analysis.

This guide includes both action steps and less concrete considerations, such as reframing attitudes toward data collection — a critical component of any cost-based analysis. While this document does not discuss the breadth of CA approaches and methods available, nor does it address how to conduct specific CA methods, the suggestions provided are important to consider early on in the CA adoption process. Indeed, as we gleaned from the interview process, the issues and concerns presented in this guide are inevitably what stalled state leads from diving deeper into CA. We present them here as background for others embarking on the same path, and offer action steps to avoid common pitfalls associated with implementing CA. Additional documents in this series will be tailored for those who are further along in the CA implementation process and will be available in the fall of 2016.

The guide begins with a chart entitled "Cost Analysis: Where to Start," offering an overview of the subjects discussed. The subsequent pages are divided into **three essential focus areas**:

For each section we present an overview of considerations followed by suggestions for action steps. Following these suggestions is a case study describing how Missouri CBCAP estimated the cost avoidance associated with child abuse prevention in their state.

Cost Analysis

WHERE TO START

Do you want to conduct a cost analysis, but not sure if you're ready - or even where to begin? Use this chart to determine your first steps. Read the corresponding discussion in the guide, and be sure to talk to your FRIENDS TA Coordinator about how to apply this information to the specifics of your program.

1. Stakeholder Buy-In

Prior to putting any CA initiative into practice, you must facilitate stakeholder buy-in. We define stakeholders as anyone affected by a program, including participants, employees, managers, board members, and community members. In talking with state leads, we learned that before embracing a CA approach, program stakeholders want to know exactly how such a system would function, from pragmatic details (*who does the work? how is it paid for?*) to philosophical dilemmas (*will this change the way CBCAP programs are viewed?*).

In most cases, garnering support will involve alleviating concerns common to any new model requiring adjustments to reporting standards and methods, including:

IMPACT ON SERVICES | **DATA USAGE** | **RESOURCES REQUIRED**

IMPACT ON SERVICES

One state lead summed up the prevailing attitude among direct service providers as follows: "You either spend it on service or you spend it on reporting or you spend it on something in between. You can't do both, or all three, or anything like that."

The perception of many state leads — and their CBCAP grantees — is that imposing additional data collection requirements on already overburdened providers would negatively impact the quality of their work. This is partly a concern of time involved (there are only so many hours in the day) and partly one of emphasis and training. Many service providers see data collection as requiring a very different skill set than skills necessary for interacting with people.

"I do hear from workers in some of our meetings, 'are they in the home to help the family, or are they a data collector?'" a state lead reported.

Another state lead voiced a similar sentiment. "I get why we need and want the data, and why we want to be able to make sure it's working, and be able to tell the story about what a difference it makes, and why these programs should be prioritized over others … I also, at times, get nervous that we are almost creating an impossible situation where their priorities are maybe doing administrative work as opposed to really doing service delivery."

Even more concerning is that, in some cases, there is a fear that intensive data collection will impair the relationship between provider and family. Home visitors in one state expressed resistance to adding additional requirements (such as adding pre- and post-surveys or new questionnaires) to their existing protocol for exactly this reason.

"They tell us they walk on a tight rope," that state's lead explained. "A lot of the families are embarrassed to have services. They do not want people to know. … I think they get this perception 'if I ask a family, it's going to hurt our relationship. I would rather have a good strong relationship and help the family than gather the data.'"

From family to service provider, and from community group to state administration, stakeholders at every level need to be convinced that implementing CA won't diminish the effectiveness of their work. If your service providers do not buy into the need for such a fine-grained analysis, they are unlikely to persuade the families they work with to provide the necessary data, which will lead to frustration for all — and inhibit the process. Far better to follow the example of the state lead who described framing data collection as a form of "shared decision-making" for their clients, thereby transforming the process from a burdensome obligation to a collaborative and empowering part of program services.

Action Steps

Discuss the process with service providers and other stakeholders ahead of time, considering their perspectives as part of a realistic assessment of the resources necessary to conduct a successful CA. Where possible, incorporate their feedback to streamline the process, so that expectations remain reasonable, in terms of both effort and results.

Take an honest look at existing organizational resources. Which staff members will be directly impacted by a change in collection and reporting protocol? How will core outreach services be protected and maintained? Factor staff training and support into your CA plan.

Encourage providers to think of time spent on CA as crucial to your program's ability to continue, grow, and thrive. Demonstrated cost effectiveness is a powerful argument for sustaining and even expanding services, ultimately allowing you to help more families.

Give providers talking points for explaining the importance of data collection to the families they serve.

DATA USAGE

Another common concern impacting stakeholder buy-in is that of data misuse. State leads reported that stakeholders often fear that collecting data on vulnerable populations exposes both individuals and organizations to potential data mishandling or misunderstanding. From general concerns about confidentiality to the specter of racial or other forms of profiling, state leads stressed the importance of alleviating fears through tight data security. A question that should always inform practice, suggested one state lead, is "who is going to take the information and what are they going to do with it?"

Related to this concern was a worry that presenting CA out of context would fail to accurately represent the program's value to society. "I think at times people can use these numbers to defund things when they don't understand the limitations of the research," another state lead noted. Because CBCAP programs often produce hard-to-quantify results that seldom manifest in the short-term, a superficially understood CA could potentially work against an organization's interests by creating the appearance of inefficiency.

Some state leads expressed strong reluctance to use cost as a measurement tool, especially when tallying something like the well-being of a child. In the words of one state lead: "I'm not sure that producing the lowest cost is going to give you the best results."

Another obstacle reported by many state leads is simple inertia, at both the individual and institutional levels. Providers and organizations that have done things one way for years may not be motivated to learn a new system of data collection and reporting. In one state, some of the stiffest resistance to more robust data usage came from "established organizations that are pretty much just used to getting a check every year and maybe accounting for some of it and maybe not." State leads elsewhere encountered similar attitudes suggesting that agencies often comply with state-level requirements only for the duration of funding, and as soon as the grant period ends, revert to old models of case management. Persuading grantees to establish and maintain new standards of data collection and reporting is an ongoing challenge that by all accounts will require an investment of more than one form of capital.

Action Steps

Protect client confidentiality. In several states this was accomplished by assigning numbers to files instead of names, to preserve anonymity.

Establish clear parameters for data access. Who will be able to view client records, and under what circumstances?

Identify how program data will be analyzed and reported. How often will results be evaluated? Will the person responsible understand how CBCAP programs work? What is the intended audience for this information?

RESOURCES REQUIRED

Of the ten state leads CPPR interviewed, some had already begun to shift state-level procedures toward a CA approach, while others were still in the exploratory stage. All agreed, however, that the learning curve was steep. At a minimum, implementing CA requires training employees; creating and maintaining complex databases; and finding someone qualified to accurately analyze the results. Most organizations need to either hire or outsource to accomplish this. Clearly, CA is viewed as an expensive proposition.

Further complicating the situation is the diversity of CBCAP grantees, in terms of both scope and budget. While some large organizations already employ statisticians or data managers, there are many smaller programs for which service providers working directly with clients are also expected to handle record-keeping and other administrative tasks — a job made even more complicated by variations in reporting requirements from agency to agency.

One state lead suggested doing more than just simply communicating to grantees why CA is important: "I think what would be of more value is actually an easier way to collect the data. That is more efficient — cost-effective." Obviously, the task of designing and ensuring a cost-effective approach to data collection will itself take time and resources upfront, and should be a consideration when determining the specific CA model to implement. It is important when garnering stakeholder buy-in to communicate intentions to use resources efficiently throughout the entire process of CA adoption—from conception to design to implementation.

Several states described challenges unique to them. In one, this takes the form of state law. "Before we ask counties to do anything — anything — we have to identify the fund source that will pay them to do it. … We have to make it easy for people to implement and relatively cost-effective. I mean, [it] has to be worth the shift in thinking, the shift in working. And we have to prove that."

For another state, the barriers have more to do with perception. In a state where enhanced data collection has yet to produce a corresponding increase in funding, agencies are unlikely to leap at the prospect of even more reporting. Clearly one of the first steps in implementing CA must be to examine what has been done before, as well as the success or failure of such efforts. In most cases, previous attempts at analysis will have been less comprehensive than a thorough CA. Explaining how a full CA differs from simpler measurements should help — as long as that information is presented alongside a detailed plan for putting the new standards of data collection and processing into place.

Action Steps

Consider the size of the organization when laying the groundwork for CA. How will implementation differ based on number of staff, population served and total budget? Are there outside resources available (e.g. at the state or federal level) to assist smaller programs with staff development and training?

Emphasize the positive potential of CA as a fund-leveraging tool, e.g. via examples from other CBCAP organizations. If CA has yet to pay dividends in your area, look at the scope of the analysis, as well as the dissemination of information. How can that data be compiled and presented more effectively? What needs to happen at the collection stage to build a more convincing case for a program's long-term value? (See Communicating and Using Results, p. 14, for ideas.)

Provide clear information on how CA will be designed and implemented. If no additional resources are available, make sure the plan can be realistically executed with existing program resources. Communicate specifics on how resources and roles will shift. If it is determined that the plan can not be realistically implemented with existing resources, be prepared to explore other ways of conducting a meaningful CA using data that is currently available.

2. Data Collection and Processing

The next consideration when preparing to implement CA involves the actual systems for acquiring and analyzing information. Several refrains were repeated from state to state, including:

STREAMLINING/ACCESSING DATA

EXTRACTING INFORMATION

STREAMLINING/ACCESSING DATA

One area ripe for improvement when considering CA implementation is the accessibility of data, particularly across programs and agencies. State leads spoke repeatedly of data-related frustrations, ranging from hand-tallying Excel spreadsheets and paper receipts to being unable to track a family over the long-term due to incompatible systems. Several states collect extensive data but do very little in terms of analysis because the data isn't stored in an effective manner — in part because so many programs follow their own unique systems of recording and reporting.

"I am looking for some ways to herd all of these hundred, literally thousands of cats in terms of data gathering and data reporting, but it's a struggle," reported one state lead, who expressed a keen interest in the potential of CA to make apples-to-apples comparisons among disparate programs. Comparisons are further complicated by the fact that there's a wide variety of program models in place across the states. In one state, five funded counties use three different program models, while elsewhere a state lead described having "88 counties…that are essentially doing different things."

In addition to centralizing reporting among programs — and shifting from paper to web-based data storage — state leads voiced the need for a data system able to access and incorporate information from other agencies (e.g. social security or criminal justice). This would allow a broader picture of a family's progress over time.

Ensuring ease-of-use is equally essential. According to one state lead, grantees generally support the idea of improved data access; what they don't like is a collection process that feels too technical, confusing or redundant. One of the strongest selling points of CA is the prospect

of replacing cumbersome and limited systems with logical and consistent methods for gathering, storing, and studying data.

Although this may sound like a radical revision of current practice, there is no need to reinvent the wheel when it comes to data collection. In many cases, much of the information used in CA can be culled from existing internal sources. You should carefully consider how any and all existing data might be used to analyze costs, and only implement new data collection procedures when necessary. Likewise, in the event that you determine the need to begin collecting new data, do not start from scratch—review which existing tools are available to collect the data you need to perform cost analysis.

Many program staff are tempted to write a survey themselves rather than undergo the process of finding an appropriate existing survey. Unfortunately, this approach rarely yields good data. A well-written survey looks simple, but its design process is long, involved, and complex. It is extremely difficult to create survey questions that are understood by all respondents in exactly the same way, and yield clearly interpretable information. Just getting respondents to complete the survey in its entirety with appropriate responses is a matter of much art and science.

Action Steps

Use existing data sources where possible, to eliminate redundancy in collection. Much of your data, such as expenditures on staff salaries and benefits, building maintenance, or equipment, will be readily available in administrative records. If your program has an evaluation in place, data on outputs (such as number of families served, service hours, or number of workshops held) are likely already being collected, as are data on outcomes of the services (such as improved family functioning or educational attainment).

If new data are needed, identify collection tools that ensure data quality and comprehensiveness. For example, in the case of survey instruments, whenever possible use an existing survey that is widely used in your area, and preferably has been found valid and reliable. Finding an appropriate existing instrument may require more effort at the outset, but will save you many headaches over the long term in improved data quality and response rates.

Consider using representative cases when program models are not comparable. If CBCAP programs in your state employ a diverse range of models, there's no need to try to make them

all fit into a single cost estimate. A better strategy might be to select a few programs that represent the range of services, outcomes, and attendant costs in your state. Try selecting one program that is relatively inexpensive and low-contact (perhaps a public awareness campaign), one that is relatively intensive (maybe intensive case management), and one that is somewhere in the middle. Such an approach allows you to accommodate diversity, while remaining both manageable and amenable to generalization.

As much as possible, make sure your system is compatible with other state and federal data pools, thereby expanding its analytical potential. The ideal system for data collection and processing is secure, centralized, and easy to use. Web-based applications help with accessibility.

EXTRACTING INFORMATION

A prospect that excited many state leads was using CA to capture outcomes — an application beyond the capacity of many existing data systems.

According to one state lead, the most they've been able to show is "the absence of the bad," without any means of demonstrating positive progress in quantitative terms. State leads want a data system sophisticated enough to distinguish among results for clients enrolled in multiple programs, and to compare those figures with complex data on both direct and indirect costs.

"The full cost of services is really an important consideration," said another state lead. "You can have a program that sees a family just a few times and is cheaper, but you're not necessarily getting an effect. Pairing that with being able to show the effects with the data really is important."

State leads elsewhere indicated that their current measurement tools are either process evaluations or impact evaluations; linking the two would be a major step forward. As it stands, even with access to quality data they couldn't compile more than a crude CA, because they lack a mechanism for capturing elements such as leveraged services.

Yet another state lead hoped to find a tool capable of addressing questions of prevention. *Is it possible to distinguish between factors that lead to neglect? How do you choose the most telling indicators? Based on those results, where do you spend your money to have the most impact?*

Before any such results may be distilled through CA, the quality of the data entering the system must be established. As the name implies, cost analysis relies on a thorough accounting of all costs associated with a program. Often, obvious costs such as employee salaries are taken into consideration while less obvious figures (e.g. volunteer time, training-related expenses, or language translation services) are left unrecorded. A complete cost analysis takes into consideration both direct and indirect costs. See Direct and Indirect Costs Tip Sheet, p. x.

It should be noted that some aspects of CBCAP programming are likely to elude even the most sensitive models. Several state leads brought up the matter of intangible benefits, such as the emotional support offered by relationships formed within a program, or the skills of an individual social worker. CA will usually not be able to capture these kinds of program benefits. However, it can be a complementary piece to the larger story of your program, one that encompasses cost, measurable outcomes, personal stories, and other kinds of qualitative information.

Action Steps

Ensure that all costs (direct and indirect) are accurately and fully represented, to the best of your ability.

Identify what your needs are for synthesizing and analyzing results, making an effort to capture subtle distinctions. Can your data link process to impact? Do you need to explore the relative efficacy of various prevention initiatives? Or to record otherwise intangible benefits?

Identify outcomes you currently or would like to measure, and consider how they could be attached to cost.

Don't lose sight of the intangibles. Keep track of qualitative evidence of your program's success and look for ways to triangulate it with what you learn about cost effectiveness and cost avoidance.

3. Communicating and Using Results

Safeguarding the integrity of the CA model through proper design, training, and institutional support is only part of the equation. Once analysis is complete, results should be presented with the same level of care and consideration as used during the data gathering process. Tailor your communication for each subset of stakeholders. For example, an internal review by program staff and leadership would necessarily require a different level of detail and tone than an outward-facing document geared toward legislators, media outlets, or potential funders.

In addition to its utility as a messaging tool, CA has strong evaluative applications, particularly across programs. For those in the position of allocating funds, CA can provide a clear view of relative costs and effects across programs.

COMMUNICATION | APPLICATION

COMMUNICATION

State leads were anxious to see proper framing of results for every subset of stakeholders—from those inside the process (families, service providers, community organizations and supervisory agencies) to politicians and observers, including funders and the media.

One state lead, a former social worker, found client families highly receptive to being informed about programmatic data so long as it was conveyed in a non-clinical manner: "They like the information, they just need it represented in a language they understand."

Likewise, service providers, while certainly well-versed in the terminology of their field, may also experience barriers to understanding. Not everyone speaks the language of graphs and charts. Supplementing tables and statistics with clear explanatory text will help staff grasp the bigger programmatic picture -- and share that vision with others.

One of the most appealing aspects of CA for state leads is that it translates well in corporate and legislative realms. "If we could show some return on investment and some hard data on outcomes, it speaks to legislators and policy makers at a different level," said one state lead.

Converting human experience into a mathematical formula carries inherent risks, however — chief among them the danger of oversimplification. To prevent data from being misunderstood, any CA report needs to present adequate background information and benchmarks.

"I do see funders constantly saying, 'How many kids did you serve? What is your total budget?' and they easily do the math and say, 'That's a thousand per child,'" said one state lead. "But they don't have any other context. What is a normal prevention cost per child? What is a reasonable one? They don't ask it outright, but they definitely try to do the math in their head." CA allows you to frame results appropriately for your audience and present calculations that fully consider both sides of the cost-benefit equation to avoid conclusions being drawn based on incomplete information.

Another factor that requires explanation is timing. As one state lead pointed out, "The data on child abuse and neglect, for example for the home visiting programs, is not that different in the beginning months from families who receive no services. Then you start to look a year, two years, three years later and you really start to see the difference. So it takes some engagement and some time. And that costs money."

Several state leads expressed a desire for talking points to help them explain the dynamics of CBCAP programming to those unfamiliar with the work, so that no-one reduces a complex analysis to the simplest possible formula. An important component of this is framing the conversation in terms of future savings resulting from early intervention.

"People who maybe aren't looking at the basic moral and ethical issues around why we should help these families, and help to prevent child abuse and neglect, they can understand that if we help them now the savings to society in terms of cost and correctional facilities, for mental health and school and things like that, are exponential," said one state lead.

Action Steps

Involve families in the process. Explain why their data matters, and how it will be used to help them — and others.

Provide talking points (benchmarks, background) to place CA results in the proper context. What is the cost of *not* investing in your program?

Use the appropriate language for your audience. Avoid jargon or acronyms that people outside your field are unlikely to recognize.

Try using social math to meaningfully illustrate costs of services. Social math is a simple way to make data easier to grasp by relating it to things that we already understand. For more details, see Social Math: Storytelling through Numbers, on page 18.

Contextualize costs whenever possible. How do they compare with other services in your state, or with similar services in other states?

Be on the lookout for possible savings to the community, state, or society at large. What do you expect the long-term impact of your program to be? Can it be put into economic terms? What have other similar programs done to illustrate cost savings?

Social Math

Storytelling through Numbers

Social Math, a term coined by the Advocacy Institute and Berkeley Media Studies Group, is an approach to communicating data by relating it to things we already understand. Raw numbers, without context, are often not relatable or memorable. By making vivid comparisons and presenting numbers in a familiar context, we help people understand the story behind them. This form of persuading through storytelling is an art, and takes time, but makes communications much more effective. In the example below, we use shocking number comparisons to highlight the importance of prevention.

According to the Centers for Disease Control and Prevention,[1] there are several kinds of comparisons we can make to help messages resonate, including comparisons to:

- Familiar numbers or costs (for example, the cost of car payment)
- Dramatic events (the number of residents displaced following Hurricane Katrina)
- Costs that are smaller and understandable (the program would cost less than the cost of a cup of coffee each day)
- Current numbers from other issues (it's more than one-third of what we spend on prescription medication each year).

The social math story must be accurate, relevant to the data, and familiar to your users. The best social math provokes an emotional response. Try using social math in an infographic or with compelling photos to make the data even more memorable and persuasive.

For examples and steps to get started with social math, visit the Berkley Media Studies Group blog: http://bmsg.org/blog/social-math-support-public-health-policy

*These numbers are for illustrative purposes only and should not be cited.

[1] NCIPC. (2008; rev. 2010). Adding power to our voices: A framing guide for communicating about injury. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/injury/framing/CDCFramingGuide-a.pdf

APPLICATION

In one state, a form of CA is already being used to leverage funding from the corporate sector — an initiative that has spurred organizational and administrative changes for that state's CBCAP programs.

"We have tried to really align our practices more the way you'd run a corporation," explained the state lead, who comes from a business background. "It's essentially less touchy-feely, more market-driven. So I can go say, 'This is what you're buying. For this dollar amount this is what you get — this is what you're serving. This is what you're helping.'"

Knowing where to direct resources for the greatest impact would also be a boon to state leads charged with handing down funding decisions, often without the benefit of concrete data on cost and effect. One state lead noted that their offices are frequently asked to approve grants on the basis of tradition without any way of evaluating that program's effectiveness.

Other state leads agreed that access to comprehensive CA reports would be extremely helpful in apportioning a limited pool of funds in the manner most likely to make every dollar count. Cautious as many were about sharing data on outcomes and expenses, state leads were nonetheless eager to have access to such information themselves. Although CA is often mentioned in the context of lobbying for outside funds, it can also provide significant programmatic insights.

Action Steps

Examine data (preferably longitudinal) on program impact and effectiveness.

Evaluate future allocations, taking into account extenuating factors that may have influenced data.

Use clear evidence of programmatic value to pursue new sources of funding in the community and beyond.

Conclusion

Translating complex human services into terms easily grasped by those outside the field is an ongoing challenge for CBCAP agencies, and the providers they support. The shift toward more intensive data collection and reporting — as exemplified by a CA model — reflects a growing belief in the importance of equipping CBCAP grantees with the tools to both justify ongoing support and successfully pursue new sources of funding.

The potential advantages of a CA model were widely acknowledged among CBCAP state leads, despite the reservations expressed.

"In our world, dollars talk," a state lead acknowledged. "We want it to be about 'this is what we should do to protect kids, to prevent these horrible things from happening, to help families' … but to help with that conversation it's also the economy — the economics of it."

In the quest for sustainability, presenting the strongest possible evidence of a program's value to society is a goal upon which everyone can agree.

Case Study

Children's Trust Fund of Missouri

Bopp, K. D., PhD. (2011, November 1). Social Cost Savings and Impact of the CBCAP Missouri Model in Preventing Child Abuse/Neglect.

In 2011, the Children's Trust Fund of Missouri (CTF) put out a short report estimating cost savings associated with child abuse prevention in the state. Dr. Kenneth D. Bopp, a professor in the University of Missouri School of Medicine Department of Health Management and Informatics, used Missouri CBCAP data to estimate the number of children served that would have otherwise suffered abuse or neglect, along with existing research estimates for the outcomes of abuse, to calculate cost savings associated with abuse prevention. Although the estimates do not incorporate the cost of services, the findings suggest savings associated with these programs are substantial: **$11.4 million in direct cost savings to the state** through reductions in hospitalization, child welfare services, and law enforcement, among other factors. **An additional $6.3 million in indirect long-term savings** was estimated, for cost reductions such as physical and behavioral health, adult criminality, and lost productivity to society.

CTF's motivations in creating this report would be familiar to leadership and staff of many CBCAP programs: they wanted to build awareness about the important work of CBCAP programs, at the community level and among state-level policy makers. Cost analysis became an important way to address the narrative that so often accompanies discussion of social services – that is, whether the cost of these programs is justified. The CTF report flips this script, essentially asking "what is the cost of *not* investing in prevention?"

Laura Malzner, CTF Program Coordinator, put it this way: "People who aren't looking at the basic moral issues around why we should help these families, and help to prevent child abuse and neglect, can understand that if we help them now, the savings to society are exponential."

Estimating the number of children who were at risk of maltreatment

In the CTF Social Cost Savings Report, Dr. Bopp begins by estimating the number of children in Missouri who would have been abused had their families not received intervention services. To do this, he takes advantage of Missouri CBCAP data on the Child Abuse Potential Inventory (CAPI), which had been administered to 1200 families at intake over the course of 12 years.

Previous research has found the CAPI to be predictive of actual abuse (Milner 1984), and subsequent research has suggested that initial studies underestimated abuse and neglect due to undetected abuse and attrition (Chaffin and Valle 2003). Based on this research, Dr. Bopp

estimates that 55% of children in families scoring a 200 on the CAPI, and an additional 15% of children in families who were referred for services but not assessed high-risk by the CAPI, would experience abuse or neglect. This yields an estimate of 543 children that would have been abused or neglected had their families not received services. Given that experts recognize that abuse and neglect are "severely underreported," and many CBCAP programs offer services to families over a number of years, rather than months, Dr. Bopp adjusts the estimate to a "very conservative" 595 children who were at risk of maltreatment.

Estimating the costs associated with abuse

To estimate the costs associated with child abuse, Dr. Bopp draws on figures from the literature regarding outcomes of the child abuse. These include:

- Severe injuries
- Chronic medical problems
- Need for mental health services
- Learning disorders
- Juvenile delinquency
- Adult criminality
- Increased health issues in adulthood

Multiplying the number of Missouri children who potentially would have been abused or neglected had their families not received services (595) by the estimated likelihood of a particular outcome (e.g., 39% would be severely injured) results in an the estimated number of children who would have suffered that outcome had their families not received services.

Dr. Bopp then draws on average costs associated with each potential outcome of abuse, using figures specific to Missouri when available, to estimate direct costs associated with child abuse:

- Hospitalization and medical services
- Child protective services
- Police investigations
- Foster care and other out-of-home placement
- Family preservation
- Rehabilitation and treatment programs

And costs associated with long-term negative adolescent and adult consequences:

- Special education
- Physical and behavioral health care
- Juvenile justice system
- Adult criminal justice system
- Lost productivity

Results

CBCAP child maltreatment prevention directly created cost savings of $11,405,239. Indirect annual cost savings is $6,343,876. Selected results are displayed below, with calculation details.

SELECTED COSTS ASSOCIATED WITH CHILD ABUSE AND NEGLECT

Outcome of abuse and neglect	Estimated affected children	Related cost per child	Estimated annual cost
Hospitalization			
39% of abused or neglected children are severely injured	**232** 595 x .39	**$18,380** average hospitalization cost for upper or lower limb and other fractures per Missouri child	**$4,612,160** 232 x $18,380
Chronic Health Problems			
30% of maltreated children suffer chronic medical problems	**179** 595 x .30	**$5,649** average cost for asthma hospitalization per Missouri child	**$1,011,171** 179 x $5,649
Mental Health			
20% of abused children are estimated to need mental health services	**119** 595 x .20	**$3,391** average cost for comprehensive psychiatric services per Missouri child	**$403,529** 119 x $3,391

Judicial System			
9.7%	**58**	**$1,907**	**$110,606**
of Missouri children with a substantiated child abuse or neglect report had court action in fiscal year 2010	595 x .97	cost per initial court action for each case of child maltreatment	58 x $1,907

Special Education			
22%	**131**	**$7,172**	**$1,016,167**
of abused children have a learning disorder requiring special education	595 x .22	the annual incremental cost related to special education per child in Missouri	131 x $7757

Key first steps in the cost analysis process

CTF's perspective on their cost analysis experience was key to helping us develop this guide to First Steps. In particular, they described **extensive stakeholder engagement, consistent collection of outcomes data, and a streamlined system for data collection and extraction**.

Engaging stakeholders

CTF leadership and staff described engaging multiple stakeholders at various stages of the process. This began with collecting the CAPI, the outcome measure that allowed them to estimate the number of children who would otherwise be abused or neglected. They convinced programs of the value of collecting the CAPI, and in turn the programs engaged families.

Ms. Malzner offered a helpful perspective on what engagement can look like: "we do have a little pushback and a little grumbling, because the CAPI is actually one of five tools that we require the CBCAP sites to use. One thing that we've seen as they've evolved the program - and credit goes to the coordinators and the folks that do those initial intakes and re-

assessments with families - is that they really approach this collaboratively with families. Its foundation is that of shared decision making. Families establish their own goals. One of the ways that our coordinators frame it is that we're doing assessments not only to get a better idea of how you and your family are doing, but also to gauge whether we're on the right track with the services we're providing. And I think that creates more of an investment from the parents."

Consistent collection of outcomes data

Kirk Schreiber, CTF Executive Director, said it best: "Cost analysis would have been a lot harder to do without starting to collect the data from day one of the project."

It was key to the development of this cost analysis that multiple CBCAP sites collected the CAPI, an instrument that has demonstrated to be predictive of actual abuse and neglect, over 12 years and with 1200 families at intake. The scope of this data collection effort is what makes the results so compelling, and the quality of the instrument allows Dr. Bopp to make a strong, defensible claim about the number of children not abused because of CBCAP services.

Streamlining data collection and extraction

CTF consultant Dr. William Holcomb, of Behavioral Health Concepts, developed a secure, web-based system to collect data from CBCAP grantees. The system employs unique identifiers instead of names, to protect client confidentiality. CTF requires that only key data elements are entered into the website, making data entry less onerous for programs. Using a website makes the system easily accessible to programs, and facilitates analysts' ability to combine data collected at multiple sites.

How to replicate this analysis

1. Estimate the number of children who would have been abused using intake assessment such as CAPI – your ability to do this is highly dependent on the data you collect
2. Use estimates from existing research for outcomes of abuse – many of the estimates Missouri used could be appropriate for your analysis as well
3. Use national, state, or local data for cost per child
4. Calculate cost avoidance using this basic formula:

*X children who would be maltreated * Y% likelihood of an outcome * Z cost per child of outcome=savings associated with prevention*

Figures and Sources

The table below offers a complete list of figures and sources used in the CTF cost analysis.

Figure	Source
39% of abused or neglected children are severely injured.	Sedlak, A. and Broadhurst, D. (1996) The Third National Incident Study of Child Abuse and Neglect: NIS3. U. S. Department of Health and Human Services.
Average hospital cost of upper or lower limb & other fractures for children in Missouri in 2006 was $18,380 for children ages (0-17).	Department of Health and Senior Services, MICA, number and charges for upper limb (229), lower limb (230), and other fracture (231) for Missourians under age 18.
30% of maltreated children suffer chronic medical problems.	Hammerle (1992) as cited in Fromm, Suzette (2001) Total Annual Cost of Child Abuse and Neglect in the United States.
In 2006, the Missouri average charge for asthma hospitalization of children age 0-17 was $5,223.	Missouri Department of Health and Senior Services: Average hospitalization cost of asthma for children under 0-17 years of age in 2005.
One in five abused children is estimated to need mental health services.	Fromm, Suzette (2001) Total Annual Cost of Child Abuse and Neglect in the United States
The Missouri Department of Mental Health calculated the average cost per child for comprehensive psychiatric services to be $3,135 in 2006.	Missouri Department of Mental Health, average cost of serving children in state fiscal year by the Division of Comprehensive Psychiatric Services.
The Missouri Department of Social Services (MDSS) state fiscal year 2010 average expenditures for direct services and the cost for children in foster care was $8,825.	Missouri Department of Social Services, state fiscal year 2010 expenditures for children's services programs and Medicaid costs for foster care children.
The National Institute of Justice estimates the cost of police services for thae following interventions: child sexual abuse $84, child physical abuse $30, child emotional abuse $30, child neglect $4 (Inflation factor was applied to arrive at 2010 costs estimates shown here).	Miller, T.Cohen, M. and Wiersema (1996) Victims' Costs and Consequences: A New Look. The National Institution of Justice.
The Dallas Commission of Children and Youth determined the cost per initial court action for each case of child maltreatment was $1,372 in 1996, (Inflation factor was applied to this 1996 cost to arrive at a 2010 estimate of $1,907).	Dallas Commission on Children and Youth (1988) A Step Towards a Business Plan for Children in Dallas County. Technical Report Child Abuse and Neglect as cited in Fromm, Suzette (2001) Total Annual Cost of Child Abuse and Neglect in the United States.
In Missouri 9.7% of children with a substantiated child abuse or neglect report had court action in state fiscal year 2010.	Missouri Department of Social Services, Report of children with a substantiated child abuse or neglect with court action in state fiscal year 2006.

22% of abused children have a learning disorder requiring special education.	Hammerle (1992) as cited in Fromm, Suzette (2001) Total Annual Cost of Child Abuse and Neglect in the United States.
Annual incremental cost related to special education per child in Missouri was $7,172 in fiscal year 2006.	Missouri Department of Elementary and Secondary Education, incremental cost for special education for kindergarten through 12th grade in fiscal year 2006
Adverse childhood experiences are linked to higher adult levels of chronic and behavioral health diseases relative to non-child abused.	Felitti, Vincent J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1989) "Relationship of Child Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults". American Journal of Preventive Medicine, 14:245-258.
Women who reported childhood abuse had adult median health care costs that were 22% greater for one type of abuse and 36% greater for at least two or more abuse types than women that did not report maltreatment (inflation factor was applied to 2004 costs of $502 for women with one abuse type and $790 for women with two or more types of abuse to arrive at this estimate).	Bonomi, Amy E., Anderson, M. L., Rivara, F. P., Cannon, E. A., Fishman, P. A., Carrell, D., Reid, R. J., & Thompson , R. S. (March 2008) "Health Care Utilization and Costs Associated with Childhood Abuse". Journal of General Internal Medicine, 23(3), 294-299.
27.4% of children who were abused or neglected become delinquent.	Widom, C. S. and Maxfield, M. G. (February 2001). National Institute of Justice, (February 2001) "An Update on the Cycle of Violence".
In Missouri the weighted average cost of Division of Youth Services' high security, moderate security, and community-based care was $47,131 in fiscal 2006.	Missouri Department of Social Services, Division of Youth Services.
The National Institute of Justice estimates the loss in productivity for abuse or neglect per child as follows: ▪ Physical Abuse: 24.9% ▪ Sexual Abuse: 20.8% ▪ Emotional Abuse: 4.9% ▪ Neglect: 49.2%	Miller, T.Cohen, M. and Wiersema (1996) Victims' Costs and Consequences: A New Look. The National Institution of Justice.
13% percent of all violent crimes can be linked to earlier child maltreatment.	The National Institution of Justice.
The average cost per year of a Missouri inmate was $17,099.	FY 2010, Missouri Department of Corrections budget.

To read the full report from the evaluators in Missouri on this effort, please visit www.friendsnrc.org/activities-that-support-collaboration/cost-analysis.

Appendix

Further Information

Understanding and Engaging Stakeholders

http://betterevaluation.org/plan/manage/identify_engage_users

- BetterEvaluation is an international collaboration to improve evaluation practice and theory by sharing and generating information about options and approaches. This webpage provides an explanation of who stakeholders are, what role they play in evaluation, and how to engage them. BetterEvaluation also provides useful and practical resources for understanding and engaging stakeholders, such as community scoping and meeting techniques.

A Practical Guide for Engaging Stakeholders in Developing Evaluation Questions

http://www.rwjf.org/content/dam/web-assets/2009/01/a-practical-guide-for-engaging-stakeholders-in-developing-evalua

- Part of the Robert Wood Johnson Foundation Evaluation Series, this guide prepared by FSG Social Impact Advisors describes a five-step process for engaging stakeholders in developing evaluation questions, and includes four worksheets and a case example to further facilitate the planning and implementation of your stakeholder engagement process.

Data Collection and What Costs to Consider

http://archives.drugabuse.gov/IMPCOST/IMPCOSTIndex.html

- This manual, produced by the National Institute on Drug Abuse, extensively analyzes research studies related to cost issues of programs that treat substance abusers. It is a thorough practical guide to each step of analyzing costs and benefits of programs, including a breakdown of what type of data to collect and how to do so.

Developing a Data Collection Plan, Collecting Data, and Communicating the Results

http://www.strengtheningnonprofits.org/

- Strengthening Nonprofits: A Capacity Builder's Resource Library is a website that provides a collection of e-learning lessons and guidebooks developed by the National Resource Center to support Compassion Capital Fund (CCF) grantees between 2002 and 2010. These include practical lessons on creating and implementing a data collection plan, measuring outcomes, and analyzing data and communication results.

Communication Toolbox

http://www.crs.org/sites/default/files/tools-research/communication-toolbox.pdf

- Catholic Relief Services' Communication Toolbox offers practical guidance for program managers who want to communicate more effectively with program participants and community members. Designed for emergency programs and development programs, the toolbox focuses on communicating about programs as a way to improve accountability to those communities. This toolbox was inspired by programs in Haiti, where Catholic Relief Services observed that relatively simple, low-cost activities that promoted transparent communication substantially improved programs.

Calculating Program Costs and Examples

https://www.childwelfare.gov/topics/preventing/developing/economic/cost-program/

- This webpage from the Child Welfare Information Gateway provides a description of important costs to consider in calculating program costs, which include both financial and economic costs. Several examples of cost analyses implemented by various programs and the outcomes measured are found here as well.

Communicating the Results

http://cbkb.org/wp-content/uploads/2014/04/Using-Cost-Benefit-Analysis-for-Justice-Policymaking.pdf

- This guide, produced by the Vera Institute of Justice's national Cost-Benefit Knowledge Bank for Criminal Justice project, provides advice for consumers of CBA results in using them in making decisions regarding justice policies and practices. Section IV, found on page 11, breaks down how to interpret CBA results, pitfalls to avoid, and decision-making best practices.