Federal Reserve Bank of Atlanta

NO. 1-24 May 2024
COMMUNITY AND ECONOMIC DEVELOPMENT DISCUSSION PAPER

Benefits Cliffs Coaching with the Atlanta Fed's CLIFF Tools: Implementation Evaluation of the National Pilot

Alexander Ruder
Director and principal adviser
Community and Economic Development
Federal Reserve Bank of Atlanta

Ellyn Terry
PhD student
University of Washington

Primary issue:
The Atlanta Fed's CLIFF tools provide greater transparency to workers about potential public assistance losses when their earnings increase. The tools estimate eligibility for public assistance programs and the dollar amount of benefits, both in the current year and for future years along a career path. These features are intended to help a worker estimate the financial impact of a proposed earnings increase, reducing uncertainty and allowing the worker to plan for potential losses in public assistance. The CLIFF Tools National Pilot Implementation Evaluation was conducted to get feedback on tool functionality and to identify challenges that organizations face when adopting benefit cliff calculators like CLIFF.

Key findings:
We find three broad themes in organization-level implementation of the CLIFF tools: identifying the target population of users; integrating the tool into existing operations; and integrating the tool into coaching sessions. Pilot participants reported that CLIFF is most useful for individuals who are financially stable and ready to plan for the longer-term, rather than for individuals who are in financial crisis or "survival mode." Challenges with integrating CLIFF into organization operations were mainly twofold: staffing constraints and coaches not having sufficient time to use CLIFF with clients. For some organizations, high turnover, and the associated need to retrain staff to use CLIFF, disrupted the implementation. Lastly, some coaches were ill-equipped to discuss public assistance loss with clients, particularly when losses presented severe financial challenges.

Takeaways for practice:
Enhanced training can equip coaches to discuss public assistance losses, particularly in cases where the losses are severe. More guidance and support on tool adoption can help organizations embed CLIFF into existing processes, identify target clients who will likely benefit from the tools, and more efficiently collect and enter client data into the tools.

The Federal Reserve Bank of Atlanta's Community & Economic Development (CED) Discussion Paper Series addresses emerging and critical issues in community development. Our goal is to provide information on topics that will be useful to the many actors involved in community development—governments, nonprofits, financial institutions, and beneficiaries. Find more research, use data tools, and sign up for email updates at atlantafed.org/commdev.

No. 01 • 24 May 2024

Benefits Cliffs Coaching with the Atlanta Fed's CLIFF Tools: Implementation Evaluation of the National Pilot

Abstract:

For some workers, career advancement and higher pay can trigger a loss of means-tested public assistance. Workers may struggle to plan for that loss due to the complexity of public assistance rules and a lack of projections about their income and expenses. The Atlanta Fed designed the Career Ladder Identifier and Financial Forecaster (CLIFF) tools to help workers make more informed financial decisions about job training and employment in the context of public assistance loss and paying for basic expenses such as housing, childcare, and health care. This discussion paper presents the findings from a two-year study of CLIFF implementation by 23 organizations in 13 states. Through the analysis of interview and focus group transcripts, we find three overarching themes related to implementation: 1) identifying the appropriate population of users for CLIFF; 2) integrating CLIFF into existing organization operations; and 3) integrating CLIFF into coaching sessions. These themes along with the associated subthemes suggest ways that organizations can more effectively incorporate public assistance calculators into existing financial and career coaching contexts.

JEL classification: I38, J08, J24, J62

Key words: benefits cliffs, human capital, skills, provision and effects of welfare programs, effective marginal tax rates

DOI: https://doi.org/10.29338/dp2024-01

About the Authors:

Alexander Ruder is a director and principal adviser in Community and Economic Development at the Federal Reserve Bank of Atlanta.

Ellyn Terry is a PhD student at the University of Washington.

CLIFF National Pilot Evaluation Team

Erika Bell (Federal Reserve Bank of Richmond)

Brittany Birken (Federal Reserve Bank of Atlanta)

Brant de Groot ((formerly of the Federal Reserve Bank of Atlanta)

Elias Ilin (formerly of the Federal Reserve Bank of Atlanta)

Julie Kornegay (formerly of the Federal Reserve Bank of Atlanta)

Austin McTier (formerly of the Federal Reserve Bank of Atlanta)

John Rees (Federal Reserve Bank of Atlanta)

Edgar Reyes (Federal Reserve Bank of Atlanta)

Alvaro Sánchez (Federal Reserve Bank of Atlanta)

Steve Shepelwich (Federal Reserve Bank of Kansas City)

Daniel Tascon-Buchelly (Federal Reserve Bank of Atlanta)

Acknowledgments:

The authors thank Dave Altig, Brittany Birken, Ann Carpenter, Amelia Coffey, and John Rees for their excellent comments on earlier drafts of this paper. The authors also thank participants of the 2023 workshop of the National Association for Welfare Research and Statistics for their comments. The views expressed here are the authors' and not necessarily those of the Federal Reserve Bank of Atlanta or the Federal Reserve System. Any remaining errors are the authors' responsibility. The Federal Reserve Bank of Atlanta does not provide grants or funding to the public or to partner organizations. We do not endorse or make any representations as to the suitability of partner organizations, their products, or their programs, and we do not advise on the distribution of funds by partners.

Comments to the corresponding authors are welcome at alexander.ruder@atl.frb.org.

Section 1: Introduction

The Career Ladder Identifier and Financial Forecaster (CLIFF) was designed around a fundamental premise in workforce development—workers should experience a positive financial gain when advancing up a career pathway. According to this premise, a worker's advancement from an entry-level position to a higher-skilled occupation within an industry is accompanied by a higher salary. With a higher salary, the worker has a greater capacity to pay basic expenses, save, or reduce debt. The increased financial stability from this higher salary may lead the worker to invest in additional education, creating the possibility of securing an even higher-paying job.

However, the financial promise of career pathway advancement may not be a reality for all workers. For example, Altig et al. (2020) show that for some workers on public assistance, the higher-paying occupations along a career path may not offer a compelling financial gain. The higher pay associated with the more advanced occupations may result in benefits cliffs (when an income increase triggers means-tested public assistance losses that make a worker worse off financially), or benefits plateaus (when an income increase triggers public assistance losses that make a worker no better off financially), both of which reflect high effective marginal tax rates on earnings. These public assistance losses can impact worker advancement up a career path by reducing the financial incentive to advance or by destabilizing the worker's finances once taking a higher-paying job, which may lead to greater financial stress and jeopardize success in the new job.

CLIFF is a suite of two novel tools that embeds public assistance rules into a workforce development and career planning framework, enabling workers and career coaches to view a more comprehensive financial picture of their career path.[1] CLIFF accounts for changes in employment income, household expenses, taxes, and public assistance receipt over time, allowing workers to forecast their future gains from career advancement and losses in public assistance. The intent is to improve planning around training and career choice by identifying jobs with a high enough salary to meet a worker's financial goals and to identify public assistance losses in advance so that the worker and coach can plan to manage those losses.

Throughout 2020, the CLIFF development team recruited organizations to participate in a national pilot of the tools. Beginning in early 2021 and lasting approximately 16 months, the CLIFF pilot had several purposes. First, the pilot would inform best practices on how to incorporate tools like CLIFF into the workforce coaching process. Second, the pilot would offer opportunities for pilot organizations to provide feedback on the tool's features and performance. Third, the pilot would provide evidence about the tool's impact on informing

[1] Throughout the paper, we refer to both tools as "CLIFF" or "CLIFF tools" for brevity.

workers' career decision-making. In total, 23 organizations located in 13 different states participated in the pilot. The organizations represent diverse institutional types, including job centers in the public workforce system, human services agencies delivering job coaching to Temporary Assistance for Needy Families (TANF) clients, nonprofits offering funding and placement in short-term training programs, and nonprofits offering longer-term (over months, not weeks) financial and employment counseling together with supports such as transitional housing to stabilize families' short-term needs.

We designed the 16-month CLIFF pilot to be followed by an implementation and short- term outcomes evaluation. This discussion paper presents the findings from the implementation evaluation. The implementation evaluation is structured around three primary research questions:

- How did pilot organizations implement CLIFF?
- In what ways does implementation deviate from the CLIFF logic model, which describes the causal pathway between CLIFF usage and our expected outcomes?
- What are the lessons from the implementation process that future CLIFF implementers can use?

The research team conducted semi-structured interviews with site administrators, coaches, and job seekers at all the participating organizations. The interviews were conducted in the summer of 2022. All but one of the interviews were conducted through video conference and recorded; one interview was conducted in person and recorded. All interviews were then transcribed by a third-party company. The resulting dataset includes 405 pages of transcribed semi-structured interviews that were then coded by a research team of two analysts and the authors.

We identified three overarching themes in the data related to the implementation of CLIFF. The themes represent various types of difficulties that organizations face when implementing the tools: 1) identifying the appropriate population of users for CLIFF; 2) integrating CLIFF into existing site operations; and 3) integrating CLIFF into coaching sessions. This discussion paper presents each of these themes along with the associated subthemes that illuminate effective practices and challenges associated with implementing CLIFF in this pilot.

The remainder of the paper is organized as follows. We first discuss the relevant literature that informed the development of CLIFF and its logic model. Second, we describe the two CLIFF tools used in the pilot–the CLIFF Dashboard and CLIFF Planner. Third, we explain the logic model, methodology, and data collection. Fourth, we present the implementation evaluation themes and subthemes. We then conclude with a general discussion and directions for future work on CLIFF.

Section 2: Motivation for the CLIFF Tools

CLIFF aims to help families make more informed financial decisions about job training and employment in the context of public assistance loss and paying for basic needs such as housing, childcare, and health care. The theoretical motivation for the CLIFF design and functionality—the reasons why we expect it to have an impact on worker decision-making—is based on four distinct literatures: 1) the complexity of public assistance rules and the associated understanding of the impact of earnings gains on public assistance losses; 2) the impact of education and career earnings information on education and career choice; 3) the career coaching needs of low-income individuals; and 4) strategies to encourage individuals to focus on longer-term financial outcomes instead of shorter-term financial outcomes alone.

2.1 Navigating Rule Complexity and Predicting Public Assistance Losses

Families face complex financial decisions when balancing employment with public assistance and meeting basic needs such as childcare (Albelda and Shea 2010). The complexity is magnified when families cannot easily understand how earnings gains will impact the amount of public assistance they receive. Romich (2006) finds that families have limited awareness of the rules for specific public assistance programs they receive, mainly due to the complexity of the programs' design. Furthermore, Romich (2006) also documents that families react to sudden losses in public assistance with a sense of disbelief and frustration that the system is designed to disincentive higher earnings.

More recent scholarship finds a similar reaction of uncertainty and confusion among families on public assistance. Anderson et al. (2022) interviewed 43 parents on public assistance and found that many did not fully understand how earnings increases affected public assistance. In another recent focus group study, Winston et al. (2021, 1) found that families feel that program rules are "unclear, intrusive, and often illogical or arbitrary." Further, in other focus groups with the coaches who serve families on public assistance, Ruder et al. (2020) found that families struggle to understand benefits loss because they (and the coaches who serve them) lack clarity on program rules. In addition, they found that families find it difficult to find jobs that pay enough to outweigh the loss of benefits.

The CLIFF tools are designed to provide greater transparency to workers over potential public assistance losses when their earnings increase. Before a worker on public assistance accepts a raise or promotion or enrolls in training, the tools will estimate eligibility for public assistance programs and the dollar amount of benefits, both in the current year and for future years along a career path. These features allow a worker to estimate the impact of a proposed earnings increase, reducing uncertainty and confusion, and allowing the worker to plan for potential losses.

2.2 Informing Economic Decision-Making and Career Choice

A career advancement decision—whether it is choosing a particular training program over another, choosing to enter training at all, choosing a higher-paying job, or something else—is influenced by a complex set of factors. In economics, these decisions are often understood as shaped by three factors: preferences, constraints, and beliefs (see, for example, Haaland, Roth, and Wohlfart 2023). For instance, when choosing between two occupations, workers may *prefer* occupation 1 over occupation 2 if they enjoy the work more, feel safer, or will earn more in occupation 1. However, even if workers prefer occupation 1, they may face *constraints* (such as financial constraints like lack of savings or ability to borrow) that restrict them from pursuing the training necessary for occupation 1. In addition, a worker may choose occupation 1 over occupation 2 because of *beliefs* about some features of the occupation, such as salary.

With respect to beliefs, an assumption in a stylized model of economic decision-making is that individuals have complete and perfect information that informs their decisions about what occupation to pursue. Researchers have explored many ways this assumption fails and tested interventions that aim to update worker beliefs to correspond to reality more closely. Consider individuals who have incorrect beliefs about the financial returns to various educational or employment choices. Providing these individuals with accurate information may cause them to update their beliefs to be more consistent with the accurate information. Moreover, if beliefs affect educational choice, then these revised beliefs may lead to a revised educational choice for a student (relative to a counterfactual choice made under incorrect information).

This literature is large (see a recent review in Halland, Roth, and Wohlfart 2023), but we highlight a few key studies that illustrate the issue in diverse educational settings. Jensen (2010) surveyed eighth-grade students in the Dominican Republic and found that they underestimated perceived financial returns to attending secondary schools. When provided with correct information about the higher financial returns, students were more likely to attend secondary school. Wiswall and Zafar (2015) found that private university students in the U.S. have biased beliefs about the earnings associated with particular college majors; correct information causes students to update these beliefs to be more consistent with the actual earnings. Moreover, these beliefs are a significant determinant of major choice. In the community college setting, Baker et. al. (2018) found that students overestimate the salaries associated with four broad categories of majors and that these beliefs influence major choice. In the public workforce development setting, Ruder and Sopher (2015) surveyed adults visiting a career services center in one state and found that they, on average, overestimated the earnings and employment probability in different training program areas compared to the state's own employment outcomes data.

To inform occupational choice, the CLIFF tools provide occupational wage data and estimates of public assistance eligibility changes associated with an earnings increase. The tools provide occupation-specific wage data at the metropolitan- and nonmetropolitan area-level provided by the Bureau of Labor Statistics Occupational Employment Statistics.[2] These statistics allow workers to base their subjective employment expectations on local wage data estimates. In addition, workers may have inaccurate expectations about the severity of public assistance changes. They may overestimate losses, or underestimate gains, in public assistance when earnings rise. The tools provide estimates of these complex changes so that workers can better estimate the financial outcome of a career choice.

2.3 Career Coaching in the Context of Financial Scarcity

The career counseling methods that originate in the vocational psychology field typically focus on relating self-knowledge to information about career options. This "trait-factor" approach, initially introduced by Parsons (1909), assumes that people have different traits, that occupations require a particular combination of worker traits, and that effective vocational counseling matches a person's traits with job requirements and labor market opportunity (Parsons, 1909). For example, Holland's (1997) typology based on six attributes—Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC)—is a commonly used and well-studied information schema for assisting in the trait-factor approach (Kosciulek, Phillips, and Lizotte 2015; Rogers 2023). RIASEC helps individuals to filter an extensive list of occupations based on their interests, values, personality, and natural strengths. Holland's broader theory of career interests, which focuses on finding a fit between personality characteristics and occupation environment, has influenced how many computer-assisted career guidance systems (CACGS) classify interests and occupations for users (Leung 2022). Further, RIASEC is used widely in information tools developed by federal and state agencies, such as the Department of Labor's O*NET system (Rounds et al. 2013), Washington State's Career Bridge, and California's California Career Zone.

One criticism of these counseling approaches is the assumption that all individuals, in particular economically disadvantaged individuals and women, have the autonomy and privilege to make their occupational choices based on characteristics such as personal interests, values, personality, and fit (Gibson and Taylor 2016; Walsh and Heppner 2006). Individuals with limited economic resources may be primarily concerned with economic survival rather than vocational self-actualization. Heppner and O'Brien (2006, 84) write that "[For] millions of people in the United States today, the basic tenets advanced by vocational

[2] See www.bls.gov/oes/current/oessrcma.htm. Last accessed April 2, 2024.

psychology have little or no relevance. The goal of economic survival becomes more salient…than actualization through work." Since economic survival is the individual's focus early in the coaching process, coaches working with economically disadvantaged clients should initially focus on addressing the client's available resources and barriers to career advancement (Gibson and Taylor 2016).

The vocational psychology literature illustrates two key motivations of the CLIFF tools. One motivation for the CLIFF tools is to provide career counseling tools that are more attuned to the coaching needs of low-income populations, a need highlighted by Blustein (2011). Indeed, losing public assistance early in an individual's career can lead to a loss of financial resources, making it more difficult to pay for basic needs such as housing and food. Coaches serving individuals in resource-constrained contexts would likely benefit from more information on the barriers to advancement caused by public assistance loss. With this information, coaches could guide individuals into the initial stages of a career path with a plan to manage public assistance loss. Another motivation concerns the matching of individuals to jobs in the trait-factor approach. The CLIFF tools may improve the career match by identifying jobs that may generate *positive net financial resources*, defined as having a salary high enough to cover a family's basic living expenses, including government assistance.

2.4 Focusing on the Worker's Long-Term Outcomes

Behavioral economists and psychologists have argued that a consequence of poverty can be a focus on short-term payoffs and high time discounting. The scarcity of economic resources can also shift attention to what is scarce, which leads to attentional neglect of other needs or longer-term costs (such as loan repayment) (Shah, Mullainathan, and Shafir 2012). Interventions—such as tools that facilitate visualization of the future—may help workers overcome the limited focus on the present and plan for the longer term (Haushofer and Salicath 2023). For example, Hershfield et al. (2011) use a virtual reality environment that allows study participants (undergraduates and community members) to visualize aged versions of themselves. They find that this intervention reduces time discounting and increases contributions to savings accounts. Another type of intervention shown to promote long-term planning is a retirement calculator. These calculators,[3] which help people visualize their future retirement income compared to their expenses, can improve the adequacy of savings plans (VanDerhei and Nevin 2013) and increase retirement savings (Mayer, Zick, and Marsden 2011).

[3] See Boone (2000) and Schard (2001) for a comparison of various retirement calculators.

However, information about future income alone may not affect decision-making in the presence of high time discounting. Fryer (2016), for example, studies the effect of an information treatment about earnings on the educational outcomes of American public school middle school students. He notes that such information treatments about future earnings may not affect student effort or achievement if the students heavily discount the future.

The CLIFF tools project a worker's financial outcomes up to 25 years into the future. The motivation for this projection is to encourage longer-term thinking when an individual is making career decisions, rather than focusing on short-term financial concerns alone (such as taking a job with little or no advancement potential) or short-term costs (paying for occupational training or higher education, for example).

Section 3: The CLIFF Tools

The idea for the CLIFF tools emerged from research conducted jointly by economists and community development researchers (Altig et al. 2020). Focus groups with coaches and workers, together with numerous presentations to business leaders, community development professionals, and elected officials, informed the development of the pilot version of the tools.

At the time of this publication, CLIFF includes three tools that provide information to help individuals determine what careers may generate positive net financial resources accounting for public assistance losses.[4] During the pilot program, however, CLIFF only included two tools: the CLIFF Dashboard and CLIFF Planner (see figure 3.1).[5] The CLIFF tools are hosted on a web server and accessed by users through a public web address. Both CLIFF tools require users to input demographic characteristics, select what public assistance programs to include in calculations, and choose up to two occupations to plan for. Given the inputs provided, the tools return information about income, public assistance, and expenses over time.[6]

The CLIFF Dashboard allows users to explore the long-term (up to age 65) financial returns of up to two occupations at a time. The tool requires only a few inputs from the user: location, the number of individuals in a household and their age, the public assistance programs the user receives, and the user's occupational choices. The tool offers a more hypothetical estimate of the user's financial return since it does not customize the output to the user's finances. The benefit of this approach is speed and simplicity of use, which fits use cases where the goal is to explore hypothetical situations, identify potential financial barriers

[4] We define net financial resources as after-tax income, plus public assistance, minus basic expenses.
[5] The third tool, CLIFF Snapshot, does not have longer-term career planning functionality. It estimates immediate changes in public assistance eligibility given a one-time increase in earnings.
[6] The methodology for projecting income over time is explained in Ilin & Terry (2022).

and opportunities, and more generally start a discussion about public assistance loss. The downside of this approach is that the results are not individualized to a user's unique financial situation.

In some use cases, such as financial coaching and budgetary planning, users may need individualized results. The CLIFF Planner is a more intensive version of the CLIFF Dashboard because it allows for more personalized results for the user, such as an individual budget, training costs, and customized starting occupational wage. Refer to figure 3.1 for the features of the Dashboard and the Planner, and to compare the differences between the two tools.

Training videos on how to use the tools, quizzes, and a final exam are provided online at no cost at the Advancing Careers Academy. Demo versions of the tools with limited geographic and career choice functionality are available on the Atlanta Fed's Advancing Careers website. Additional illustrations of the tools are featured in appendix 2.

Figure 3.1: Basic Features of the CLIFF Tools

Dashboard

Explore the potential financial returns of different careers

*Client is interested in **long-term** career planning AND wants a **general** idea about potential financial barriers to career advancement.*

Time to Complete	● ● ○
Customized Work Hours + Wages	No
Career Selection Component	Yes
Occupational Wage Information	Yes
Custom Expenses	No

Planner

Create a detailed budget in support of a career move

*Client is interested in **detailed** career planning AND wants to create a **custom budget** to help navigate potential financial barriers to career advancement.*

Time to Complete	● ● ●
Customized Work Hours + Wages	Yes
Career Selection Component	Yes
Occupational Wage Information	Yes
Custom Expenses	Yes

Source: authors.

Section 4: Logic Model, Methodology, and Data Collection

Our evaluation of the implementation of CLIFF at pilot organizations is structured around these primary research questions:

- How did pilot organizations implement CLIFF?
- In what ways does implementation deviate from the CLIFF logic model?
- What are the lessons from the implementation process that future CLIFF implementers can use?

4.1 Logic Model

The logic model has two primary purposes in an evaluation. First, it connects the inputs, activities, and outputs of a program to the expected outcomes (Gertler et al. 2016). Second, it reveals assumptions implicit in an intervention that are necessary for the intervention to work as intended (Gertler et al. 2016). Thus, the CLIFF logic model identifies how the CLIFF intervention can improve outcomes for low- and moderate-income workers and reveals implicit assumptions that underlie the successful use of the tools in coaching settings.

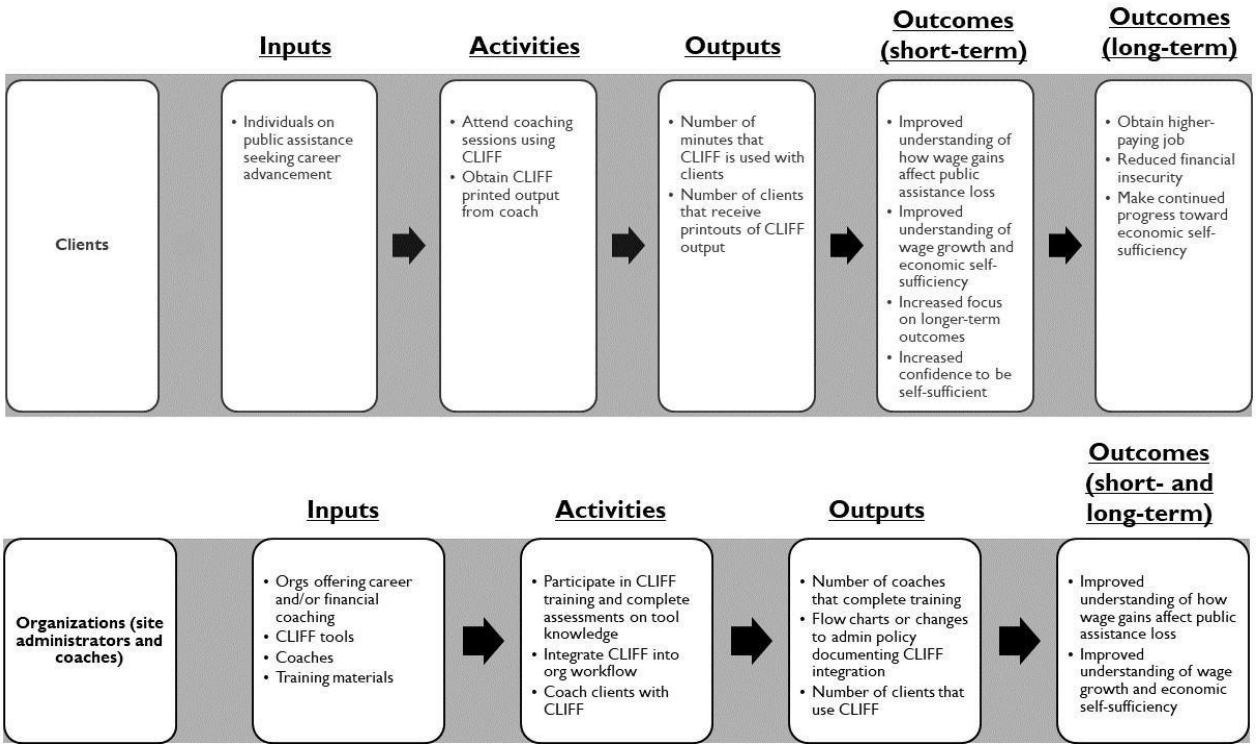
The actors in the logic model are divided into two groupings: the organization (site administrators and coaches) and the clients (the individuals seeking career advancement). Site administrators are individuals overseeing the CLIFF implementation at each organization and typically also manage the general operations of the site. "Coaches" is a general term we use to refer to the trained staff who are using CLIFF with clients of the organization. Coaches serve a variety of roles. For example, coaches may help stabilize clients' finances by assisting in their search for a higher-paying job, or they may focus on financial counseling. Coaches may also advise clients on the education or training steps required to obtain a new job, on where they might be able to find funding for such training, or on enrolling in introductory job prep courses such as resume writing or soft skill workshops. Coaches' responsibilities may include one or many of these activities, and their roles vary across and within organizations.

Each of these actors has a different responsibility in the pilot. The site administrator's job is to integrate CLIFF into site operations. This activity will involve developing guidance for coaches about how to integrate CLIFF and creating a plan to train staff. The coaches participate in CLIFF training, counsel clients with CLIFF, and integrate CLIFF into client sessions. Clients attend counseling sessions using CLIFF.

The top section of figure 4.1 shows the logic model for clients. The inputs box shows that clients are intended to be individuals on public assistance seeking career advancement. These individuals then undertake the activities in the activities box, which include using the CLIFF tool with a trained coach. The measurable outputs from this process would be the

number of total minutes clients typically use CLIFF, as well as the number of hardcopy reports clients take away from the coach. The short-term outcomes include increased knowledge of the impact of career advancement on personal finances and the long-term outcomes, which are not assessed in this implementation evaluation, include improved economic mobility through career advancement.

Figure 4.1: The CLIFF Logic Model



Source: authors. We follow the definitions of Gertler et al. (2016) for inputs, activities, outputs, and outcomes.

The bottom section of figure 4.1 shows the logic model for organizations. For the inputs box, we include organizations that offer career and/or financial coaching advice, the CLIFF tools themselves, and access to CLIFF training materials. The activities include completing CLIFF training, integrating CLIFF into the organization's workflow (with a flow chart, for example), and ultimately using CLIFF with clients. The measurable outputs from this process include the number of coaches who complete training, documentation showing the integration of CLIFF into the organization's workflow, and the number of clients who use CLIFF. We have only specified two outcomes at the organizational level: improved understanding

among coaches and site administrators of the impact of wage gains on public assistance loss and improved understanding of what jobs might generate positive net financial resources.

Several assumptions are implicit in the logic model. It assumes that site administrators can effectively integrate CLIFF into site operations. Organizations will determine when and how to use CLIFF during the pilot and should be able to answer questions such as: How will clients learn about CLIFF? Will CLIFF be required or optional for the coach to use with the client? and, will CLIFF be used in the initial coaching session with a client, subsequent sessions, or all sessions?

Integrating CLIFF into the organization's workflow also includes the determination of which clients CLIFF can help. For example, some clients may not be seeking services to advance in their careers and would likely not get significant value from CLIFF.

The logic model also assumes site administrators can determine how best to train their staff on CLIFF. For example, coaches might train using the online Advancing Careers Academy curriculum, and then practice collaboratively using case studies; others may only use the online curriculum without the additional practice.

For coaches, the logic model assumes that they can effectively incorporate CLIFF into their client sessions. It assumes coaches see value in the tool; that is, CLIFF provides information they do not already have and is relevant and helpful for their clients. The model assumes coaches can obtain the client information (such as public assistance income) that CLIFF requires for accurate calculations. The model also assumes coaches have sufficient time to use CLIFF in client sessions. Lastly, the model assumes the CLIFF training fully prepares coaches to explain CLIFF reports clearly to the client and to be able to translate the information into essential takeaways and next steps.

For clients, the logic model also makes several assumptions. For example, it assumes clients can obtain the information needed to use the CLIFF tools and are comfortable sharing that (likely) personal information with a coach. It also assumes that clients use all the tools' main functionalities: information about employment income, public assistance, expenses, and, when using the CLIFF Planner, budget over time. This assumption has important implications for the outputs in the logic model. If clients do not use all the functionalities, perhaps because they only see one functionality as relevant to their employment situation, then they may spend fewer total minutes (an output in the logic model) using the tool than if they used all the tools' functionalities. This assumption also has implications for the expected short-term outcomes. For example, if clients only use the employment income and expenses functionality, then they

will not gain an improved understanding of how wage gains affect public assistance eligibility (a short-term outcome in the logic model).

4.2 Methodology

Study sample

The CLIFF team recruited organizations to participate by presenting the tool and describing the pilot at workforce conferences, human services conferences, specialized webinars arranged through local non-profit organizations (such as a workforce development board), and by direct outreach to non-profit contacts of the Federal Reserve Bank of Atlanta and other district Federal Reserve Banks. If an organization expressed interest in the pilot, the CLIFF research team scheduled an initial orientation call. Interested organizations had to complete a pilot site questionnaire that asked for a brief description of the organization's mission and core activities and services, a general description of the clients they serve (poverty status or public assistance enrollment status, for example), an explanation of how benefits cliffs or public assistance losses affect their clients, as well as details about how they planned to structure the pilot (timeline, recruitment of clients, data collection).

The CLIFF team used this information to validate that the organization was an appropriate site for the CLIFF pilot. The criteria for inclusion were that the organization conducted career or financial coaching in a workforce development context, served clients that may experience public assistance losses as their earnings increase, committed to an implementation timeline and process, agreed to participate in tool training, follow-up surveys and focus groups, and signed a Memorandum of Understanding (MOU) that documented the agreements for the pilot. We had no further criteria about implementation capacity, the timeline, recruitment of clients, or data collection. All organizations were encouraged to use a flow chart to plot how they would integrate the CLIFF tools into existing site operations and client services.

Our inclusion criteria were deliberately broad. We wanted to recruit a diverse set of organizations in terms of the clients they serve, the services they provide, and geography. We also did not want to turn away organizations that wanted to use the tool even at this early pilot stage. The risk of this approach is that we included some organizations that did not have the capacity to implement the CLIFF pilot or may turn out not to be appropriate organizational fits for CLIFF; the benefit is we recruited a diverse sample of organizations that allow us to examine CLIFF implementation in numerous contexts, which can inform recommendations for future organizations that adopt CLIFF.

We recruited our evaluation study sample from a sample frame of 70 organizations that originally agreed to participate in the CLIFF pilot. Out of these 70 organizations, 29

organizations implemented the pilot and agreed to participate in the implementation evaluation study. Of the organizations that did not participate in the evaluation study, two conducted their own independent evaluations. We excluded these two organizations to avoid putting the excess burden of an additional evaluation on staff.[8] Three organizations ceased operations during the pilot and were no longer available for the evaluation. Two organizations initially agreed to the pilot but then decided against participation for undisclosed reasons. At the time of this evaluation, seven additional organizations cited unexpected delays and had not yet started the pilot but planned to start in the future; these organizations were not included in this study. Twenty-seven organizations never responded to our request to participate in the study.[9] We omitted six organizations whose pilots were not involved in using the tool with job seekers and were instead focused on policy analysis research. Our final sample is 23 organizations that used CLIFF to coach job seekers. No monetary incentives were offered to organizations for pilot participation or study participation.

The 23 organizations in the pilot are in 13 different states, and while most organizations serve both rural and urban counties, some organizations report primarily serving one or the other. In our interviews, organizations describe their typical clients as low-income (that is, below 200 percent of the FPL), without post-secondary education, receiving public assistance (especially if the person has children), and as single mothers. The organizations primarily serve working-age adults. Some organizations serve older adults who had officially retired but still needed to work part-time in retirement to make ends meet. Several organizations report having youth programs that target high school students and young adults. The organizations represent diverse institutional types, including job centers in the public workforce system, human services agencies delivering jobs coaching to Temporary Assistance for Needy Families (TANF) clients, nonprofits offering funding and placement in short-term training programs, and nonprofits offering more in-depth, longer-term (over months, not weeks) financial and employment counseling together with supports, such as transitional housing, to stabilize family's short-term needs.

One limitation of our study is the potential for sample selection bias in at least two ways: selecting into the set of 23 organizations that implemented the tool and agreed to

[8] In advance of the pilot, we informed organizations that if they conducted their own evaluations our team would not ask them to participate in an additional evaluation. Sites often expressed concern about using too much staff time for evaluations, which led to our decision to ask only for one study.

[9] Informal conversations with leaders at some of these organizations suggests that the reason for non-response is that the organizations never began the pilot and were uncertain about starting in the future. Competing demands for time, limited resources, and staffing were common explanations for the decisions. For organizations we were unable to contact, we cannot know the reason for non-response.

participate in the evaluation or selecting into the set of 70 organizations that agreed to participate (but not necessarily implement) the pilot. Only 23 organizations implemented the pilot and participated in the evaluation from an original pool of 70 organizations that had agreed to participate. Systematic differences may exist between implementing organizations and those that chose not to implement the pilot. Sample selection bias may also be present in the decision to agree to participate in (but not necessarily implement) the pilot. A total of 70 organizations originally agreed to participate in the study and signed MOUs. These organizations that agreed to participate in the CLIFF pilot are not a random sample of all workforce-focused coaching organizations that serve individuals on public assistance, which may limit the generalizability of findings.

Another limitation to generalizability is that both the pilot and implementation evaluation occurred during the first two years of economic recovery from the Coronavirus (COVID-19) pandemic-induced economic disruption. The pandemic affected study participants in numerous ways. Some organizations eliminated in-person coaching sessions and others struggled to retain and hire workers. This period also included expanded access to public assistance support to help stabilize families affected by the economic crisis, particularly through the 2020 CARES Act and the 2021 American Rescue Plan. These laws expanded access to and the value of multiple public assistance programs, including unemployment insurance, food assistance, and tax credits.

Training and procedures

Once we had recruited the organizations to participate in the evaluation, the next steps involved explaining the pilot procedures to site administrators and training coaches. We conducted an orientation meeting for the site administrators. In the orientation, we emphasized that site administrators were responsible for creating procedures to integrate the tools into their organization's operations for the duration of the pilot. We encouraged site administrators to use a flow chart to pre-specify how they would integrate the CLIFF tools into existing site operations and client services (see appendix 3 for an example). We also emphasized the importance of tracking how frequently coaches used the tool, what functionalities they typically used, and the public assistance programs the clients typically received. Finally, we scheduled bi-weekly or monthly check-in calls with each pilot organization, during which we reviewed any available tool usage data and discussed feedback from coaches on both coaching sessions and tool performance.

The CLIFF team provided two to three separate training sessions to coaches. The first session was a two-hour introduction to the issue of the benefits cliff. We reviewed the concept of benefits cliffs and described some possible ways it affects individuals enrolling or

enrolled in workforce development programs. We also covered associated concepts that coaches need to know to use the tools, such as the expenses included in the cost-of-living measure. The additional courses were detailed training sessions on the CLIFF Dashboard or the CLIFF Planner. Some coaches completed both the Dashboard and Planner courses. These classes, about five hours in total duration, focused on the functionality of the tools. Each course included multiple quizzes and a final exam to assess student learning. Coaches received a certificate after completing each course. Initially, these trainings were conducted virtually. However, early in the pilot, we moved the training courses to an online course platform. The online courses, which we named the Advancing Careers Academy, allowed our team to scale training. With the Advancing Careers Academy, our team could train more coaches and coaches could take each course at their own pace.

Overall, we required pilot organizations to follow a short list of procedures: a) attend site administrator orientation and create site-specific procedures to integrate CLIFF; b) complete training for coaches; and c) participate in regular check-in meetings and the evaluation study. We had no additional required procedures for site administrators or coaches to follow. The reason that the CLIFF tools pilot does not have more procedures is that we consider this a formative study. We created the pilot to learn how the tools are used by diverse organizations and by different types of coaches (for example, career coaches or financial coaches). We had no pre-specified guide to integrate the tools across different types of organizations, collect data, or integrate the tools into different types of coaching sessions. One of the broad goals of the study was to learn what procedures need to be in a more specific implementation manual for site administrators and coaches.

Data collection

We conducted semi-structured interviews with site administrators, coaches, and clients. We chose the semi-structured format to balance the need to cover consistent topics across all interviews but allow for unique follow-up questions and probing depending on the context and engagement of the interviewees. Some interviews were conducted with only one interviewee, while others involved small groups ranging from two to four individuals. To recruit clients for the interviews, we asked the site administrators and coaches that we interviewed to provide us with a list of names of clients who had used CLIFF and who they thought would be willing to talk to us. We reached out to all names provided.

We planned to interview each of the three groups separately. However, in some smaller organizations, the site administrator also served as a coach, so the site administrator and coaches were part of the same interview. We also planned to interview each organization separately. However, in one case we allowed three organizations' site leaders to interview

together because they worked together closely throughout the pilot and felt they could best answer our questions as a group. We also allowed these three organizations' coaches to interview together.

The interviews were conducted in the summer of 2022. All but one of the interviews were conducted through video conference and recorded; one interview was conducted in person and recorded. All interviews were then transcribed using a third-party service. The resulting dataset included 405 pages of transcribed semi-structured interviews. The questionnaires used in each of these interviews can be found in appendix 1.

Ethical considerations

The research team obtained written consent to participate in the study from each interview subject before conducting the interviews. Clients, who were not paid employees of the participating organizations, were compensated with $20 prepaid gift cards for the approximately one hour required for the semi-structured interview. The recordings and transcripts were stored on a secure drive hosted by the Federal Reserve Bank of Atlanta and were only accessible to team members actively working on the evaluation. We deidentified transcripts before analysis.

Data analysis

After the interview recordings were transcribed, we used a qualitative data analysis software useful for organizing and analyzing unstructured data to facilitate the content analysis. We then used a thematic coding approach to analyze the data, which involves developing an initial set of codes, refining them through an iterative process, and then grouping codes to develop themes (Ravitch and Carl 2021). We follow Gibson and Brown (2009, 131) as "defining a theme as a generalized feature of the dataset."

Our coding approach consisted of the several steps. We used a deductive approach by starting with an initial codebook of categories and subcategories (various levels of codes) stemming from our research questions and knowledge of prior research and theory. For example, one of the broad categories in the initial codebook was *Challenges with implementing CLIFF*. As we analyzed and coded the data, we used inductive methods to add, remove, or combine codes from the original codebook to create a revised codebook. For example, the subcode *Leadership or staffing turnover* was added as we read transcripts. After coding the data, we organized the categorized codes into several subthemes and overarching themes similar to the approach described in Graneheim et al. (2017). More details on creating the revised codebook, applying it to the text, and creating themes are included in appendix 4.

Section 5: Implementation Evaluation Themes and their Associated Subthemes

The implementation evaluation seeks to understand to what extent pilot sites implemented the tool as described in the logic model, what barriers to implementation emerged, and how participating organizations faced these barriers. Our thematic analysis of the coded text revealed rich insights, which we divided into three themes: identifying the target population, integrating CLIFF into site operations, and integrating CLIFF into counseling sessions.

5.1 Identifying the Target Population

Identifying the target population was an initial challenge for most of the site administrators and coaches that we interviewed. Throughout the pilot, as organizations used the tools more with clients, they learned more about which clients benefit from the tools and those who reported little perceived value from using the tools.

Subtheme 1: Readiness

Most coaches we interviewed noted that CLIFF is useful for people who are financially stable and mentally "ready" to advance in their careers. Most coaches described *readiness* as having a certain mindset—clients seeking positive change in their lives and ready to think longer-term about their careers and finances. Such clients were frequently described as financially stable, motivated, not in a crisis (such as lacking housing or being food insecure), and interested in exploring higher-paying careers, getting off public assistance, or both. One coach, for example, noted the connection between longer-term planning and general motivation: "Someone who is future-minded and motivated are the people we will sit down with the CLIFF tools."

Many coaches identified career readiness, along with interest in career advancement, as important indicators when deciding to use CLIFF: "It's an incredibly useful tool for anyone who is considering a job change…weighing the options between two separate career paths." Another coach offered a similar response:

> I think it's useful for individuals going through the program because they're unemployed or underemployed individuals. And so they're kind of at a crossroads in their life…wanting like the best career choice moving forward.

Clients who met these definitions of readiness were frequently reported as a small share of the organization's client base. For example, one organization that primarily uses CLIFF with people seeking employment or training said that most clients come in with an attitude

focused only on the present: “I don't care what my future looks like. I just need a job.” This organization chose not to use CLIFF with this group of clients. A smaller share of clients is interested in longer-term development:

> [T]here's others that do come in that want that whole career development kind of piece and understanding what their future holds. And that would be a lower percent. So much lower, and I wouldn't even know where to guess on that.

Coaches often mentioned two distinct subpopulations of clients that benefited from the CLIFF tools: young adults and youths approximately between ages 16 and 24: “I'm thinking those who are at the community college level, those who are seeking higher education and they're not sure which career path to go.” Similarly, “I think it's been much more beneficial to our youth program participants because of that, because now is telling them the pitfalls to avoid.”

One coach reported that clients were not pursuing career advancement opportunities because locally available entry-level jobs did not pay enough to incentivize leaving public assistance: “It's very, very difficult for us to get have a conversation with someone [on public assistance] and talking to them about a starting job that may pay $10 or $12 an hour.”

Subtheme 2: Survival

While *survival*, which identifies clients in a “survival mode” as some coaches phrased it, is related to *readiness*, it is distinct in that it specifically denotes the challenging life circumstances preventing clients them from being ready for the longer-term thinking identified in Subtheme 1.

Most coaches thought that CLIFF was not relevant for clients focused on immediate needs. Clients typically visit coaches seeking resources to help with paying unexpected bills, securing reliable and affordable housing, or even finding mental health resources. These clients were described as in “crisis” situations, and career exploration and advancement were not their first concern. As one coach explained, the tool did not interest clients in these situations because it seemed irrelevant to their situation, “We have to get folks to some level of stability before they’re really capable of doing this sort of planning and long-term thinking.”

One coach characterized longer-term employment planning as an abstract exercise for those facing immediate challenging circumstances:

> When you're working with folks that are in survival mode...they're not interested in things that may seem abstract, like, you know, using the question of the jump into different job types to project how much you're going to make and that they're

> interested in. 'I need a better way to keep food on the table today and I need to keep my lights on.'

Another coach described the difficulty of using CLIFF with in-crisis clients.

> Most if not all of our clients are coming to us with some kind of precipitating crisis, which is I'm about to lose my house, my rent is doubling, or I'm going into collections. There are very few who are acting proactively for long-term planning. We tend to have to do a lot of work to get folks stabilized to the point where they can think about long-term budgeting or any kind of financial management.

A different organization piloted the CLIFF tools with public assistance recipient families in a transitional housing program, which provides temporary housing as families move from homelessness to permanent housing. The coaches reported that this population "[J]ust has too many external factors going on that they couldn't [try to gain employment]. This was the farthest thing from their minds."

5.2 Integrating CLIFF into Organization Operations

Several organizations faced initial challenges integrating CLIFF into organization operations, and others had not used CLIFF at all as of the time of the interviews. Participants spoke about several issues that limited their ability to integrate CLIFF into their operations.

Subtheme 1: Staffing constraints

To use the CLIFF successfully, staff needed to complete a training session and gain experience using the tools. Organizations reported that staff capacity was difficult to maintain because of staff turnover, delays hiring new staff, and COVID-19 disruptions. Many of the organizations that implemented CLIFF operate with relatively few staff or had only trained one staff member to use CLIFF; in these small organizations, if that staff member left the organization, CLIFF use either stopped entirely or was paused until a new coach was hired and trained:

> We started out with a small, small number of staff people. We lost those individuals and so it's kind of just regenerating that knowledge base and getting people trained to really understand the why and then actually understand the tool.

Subtheme 2: Organizations adopted different approaches to integrate CLIFF

Before the pilot began, the CLIFF research team encouraged all pilot organizations to develop a flow chart and embed CLIFF formally into their workflow for the duration of the pilot. We reasoned that a formal process offered coaches more structure in using CLIFF with clients and

would reduce uncertainty on when and how to use CLIFF. During the interviews, we found that most organizations had not created a formal structure to use CLIFF. CLIFF requirements varied from exposing all clients to the tools at an initial orientation (and leaving it up to the client to request to use it) to making it mandatory for all clients. The most common approach, however, was to make no requirements whatsoever. Organizations that had formal processes typically had a higher uptake of the CLIFF tools.

The process for integrating CLIFF was most often up to the coach. Coaches decide when in the counseling process to use CLIFF, with which clients to use CLIFF, and how to use the different features of CLIFF. In these situations, CLIFF take-up was low. For example, one organization decided only to use CLIFF when a client requested it. Since no clients requested it, the organization ended up not using CLIFF at all. No clients requesting the tool can be explained by minimal advertising, awareness, or lack of interest: "We were ready, but people just didn't take it and we couldn't get people to really walk through it the way we hoped."

Another site administrator reported that uptake among coaches was low, but also highlighted the importance of providing incentives for coaches to use a new tool. This organization, like all in the pilot, offered no monetary or performance incentive to use the tools: "I think the CLIFF Tool is a wonderful tool. [B]ut…I think I would have had a better experience in getting our forces to utilize this tool if I could have offered some type of incentive for them to use it."

Other organizations provided detailed guidance to coaches about the CLIFF tools. For example, one administrator overseeing the statewide implementation of CLIFF initially piloted the tools at only one site. The administrator asked staff to take detailed notes, including client reactions. The administrator then reviewed the data with the site, developed detailed guidance for the other site locations in the state, provided custom training, and identified a point person for future questions about the tools. Once expanded to other site locations within the state, clients could see the CLIFF tools on personalized online dashboards. The site administrator encouraged coaches to use it with all clients participating in one of the state's employment programs. The site administrator also recommended that the coaches use the tools with clients at the intake phase and during any reassessment of the client's goals.

Subtheme 3: Time constraints

When speaking to organizations with low CLIFF usage, we found that coaches had conflicting responsibilities that left limited time for CLIFF implementation. This time constraint appeared in two ways. First, coaches had limited time to work with a client in a typical counseling session. CLIFF, they reported, was too time-consuming to fit into these short sessions that were already full of programmatic and administrative requirements such as data entry,

eligibility screenings, and case management. For example, one coach noted that "Workloads are very high," and another, "It [CLIFF] takes a while to go through everything."

Second, and distinct from lacking the time to go through all the information, coaches reported frustration about duplicate data entry. Coaches are required to enter demographic, economic, case notes, and other information about clients into administrative data systems. CLIFF was viewed as a computer program that required inputting much of the same information. A site administrator explained, "They [coaches] saw the CLIFF tool as yet another tool that they would need to populate and…duplicate the same information."

Subtheme 4: Lack of training and information

As discussed in Subtheme 2, some organizations chose to use CLIFF only when a client requested it and, perhaps as a result, these organizations all had low take-up of the CLIFF tools. When asked to explain the low uptake, respondents reported challenges with advertising and explaining the tools' value. If clients were neither aware of the tools nor confident CLIFF was worth their time to use, then it is unsurprising that they did not choose to use CLIFF.

Some coaches felt poorly equipped to explain the full value of the tools to clients. For example, one coach said, "I would like to be better at pitching." One administrator suggested that better marketing materials would have increased uptake:

> There needs to be like an exciting elevator pitch. 'So it's like, what's in it for me?' Maybe some stories about how other participants have benefited, I think that can be very beneficial.

Coaches at organizations with higher uptake did use participant stories to interest new clients, as suggested in the quote above. As one administrator explained, "The more we do it, the easier it is for our workforce specialist to share good feedback from other participants."

5.3 Integrating CLIFF into Counseling Sessions

Subtheme 1: Dedicating time and contextualizing usage

One key aspect of CLIFF implementation was integrating CLIFF into an existing process for coaching clients. Some coaches dedicated the session entirely to CLIFF, while others dedicated only a part of a session to CLIFF. Organizational focus explains most of this difference in approaches–organizations in which the coaches meet with clients multiple times over a longer period have more opportunities to schedule a session dedicated entirely to CLIFF. Some coaches reported using CLIFF multiple times with the same client over a longer

period. Organizations in which the coaches only meet with a client only once or twice had limited time to fit CLIFF into already busy coaching sessions.

Usage time for CLIFF within these sessions varied by organization. Most coaches reported using CLIFF for at least 30 minutes per session. Only two organizations reported tool usage time of less than 30 minutes. Coaches who used CLIFF with clients for one hour or more tended to use CLIFF as a springboard for other conversations or to compare multiple career or budget scenarios for the client:

> I think it's a good tool to use to really think about their finances as well in addition to looking at education and training and getting into a position, maybe moving up into a higher-level position in, in their own field or in a different field. And that really sets it up for a conversation, as you mentioned, around financial, education, financial counseling, financial skills, management skills.

Coaches presented the CLIFF tools to clients in multiple ways. The sessions were typically one-on-one with a coach and client, although one organization reported using it with a group of clients. The group session aimed to generate interest in using the tool one-on-one. Coaches used CLIFF in person, over the phone, or online by sharing their screens.

One coach preferred to use CLIFF in person because "It's a little bit easier to have an honest and genuine conversation that way." Sessions not conducted in person, however, faced challenges. Screen sharing may not work because clients do not always have access to computers, and cell phone screens are too small to see the CLIFF information displayed clearly. To avoid these issues, some coaches entered the client's information into CLIFF ahead of time using a paper worksheet the client completed. Then, the coach sent a PDF of CLIFF output to clients and discussed the results over the phone.

Subtheme 2: Collecting client information

To provide accurate and individually tailored information to the client, the CLIFF Dashboard and especially the CLIFF Planner require the user to input detailed household information, including the number of people in a household, the age of each household member, the total income of all household members, and the public assistance programs that the user is currently receiving. The CLIFF tools also require the user to select two jobs, typically the job the person is currently in and the job the person is aspiring to be in. Users have the option to enter the duration of occupational training. In the CLIFF Planner, users can also enter the number of hours that they intend to work while they are in training and add the cost of training to their calculations by inputting tuition costs, student loan costs, and grants. The CLIFF Planner also requests users to input assets, which the tool uses to run asset tests for various

public assistance programs. Users of the CLIFF Planner can customize their budget by entering monthly housing, childcare, food, transportation, repayment of credit card and other debt, and other expenses for up to a five-year planning horizon.

Most of this information is optional in the CLIFF Planner. Users can keep the default value of zero dollars for assets and select default estimates of typical basic expenses. However, the training encourages users to provide the client's actual assets and expenses so that the output more accurately reflects the client's actual financial situation.

In the interviews, coaches said that inputting all the client information sometimes requires pre-work: "A big learning was that it's important to collect all information needed before sitting down." Coaches also struggled when the information was not available. For example, the occupation in a particular county that they were looking for would not appear in the dropdown menu list.[10] In these situations, the coaches sometimes improvised by choosing a similarly paying occupation that was in the dropdown list.

Coaches using the CLIFF Planner also reported that clients were hesitant to provide coaches with information about their actual expenses:

> So budget and numbers is a big conversation, you know, and for some people, they're just more hesitant. Some people have, you know, missing money that they don't want to explain.

Subtheme 3: Interpreting CLIFF output

The CLIFF tools include several charts and tables. One possible barrier to effective usage is if either coaches or clients do not understand these figures. When asked about reading the CLIFF output, most coaches said it was easy to understand. However, some coaches reported that they used only one or two charts rather than going through all the charts with a client. According to the coaches, they focused on the one or two charts that made the most impact on clients.

Two people (one coach and one client) mentioned liking the net expenses chart that shows out-of-pocket expenses after public assistance has been considered. The coach mentioned that the concept of benefits cliffs itself was difficult for clients to understand. This coach avoided the benefits cliffs chart and instead focused on the client's budget:

[10] Occupations may not be in the dropdown selection list if local data for that occupation is not available from the Bureau of Labor Statistics Occupational Employment and Wage Statistics. Estimates are not released for a number of reasons, including data quality concerns and the need to protect confidentiality of respondents.

> When I'm trying to explain the cliff effect to someone who may not have had that language for what they're experiencing … it feels like it's difficult for them to digest. So I find myself drawn to just showing, like basically, you know, here's your [net] expenses.

Some coaches found the calculations in the tool difficult to explain to clients. One client asked a coach to explain the health care expense assumptions in one of the charts, and the coach was unable to answer. This coach felt that the tool makes so many assumptions about expenses and earnings that it is just "analytical guessing."

Subtheme 4: Counseling strategies

The CLIFF research team provided extensive training on how to use the tools but not on counseling strategies to navigate difficult financial situations.[11] Most coaches praised the technical training. However, several coaches requested more training and example scenarios to practice.

Some coaches said that they had hoped the training would include lessons on how to coach through difficult financial situations. The results of the CLIFF tools are not always positive, and coaches felt that they needed training to walk clients through potentially difficult financial decisions. In some cases, the client's chosen career and training option does not allow them to meet their financial goals:

> What you're finding when you go through the CLIFF Planner is that really the cost of getting trained to do that will not really give you much more income [in the new job]. So I think that's helpful. But I think it's been a little disappointing to people.

In some of these difficult cases, the CLIFF tools can show that a chosen career move will result in a benefit cliff in which the client is financially worse off for one or even several years. In these cases, coaches expressed difficulty explaining the results to their clients and counseling them on what they should do:

> Some people find it a little bit, I think, discouraging, you know, because they're looking at the big picture and they know they're going to make more money. And if you get to a certain point, you're like, hey, at this point it's going to be really bad for you. But it kind of even though they know they're going to lose benefits at some point, that that gap there, that cliff, it's kind of like seeing it is different.

[11] The CLIFF training focused on the technical aspects of using the tools; counseling was recognized the purview and expertise of the organizations and best left to them.

5.4 Implementing CLIFF across Different Organizational Types

As described in section 4. Logic Model, Methodology, and Data Collection, the 23 organizations that participated in this study represent different institutional types. The important variation for this pilot concerns the services that they offer to clients and the type of clients they serve. We define these institutional types in the following way:

1. Job centers operating in the public workforce system.
2. Statewide human services agency serving families in the Temporary Assistance for Needy Family program.
3. Nonprofits offering funding and placement for short-term training programs.
4. Nonprofits offering in-depth, longer-term (over months not weeks) financial, public assistance, and employment counseling together with supports such as transitional housing to stabilize family's short-term needs.

We observed implementation varying across these different institutional types in a few ways. In the public workforce system job centers and at nonprofits offering primarily funding and placement in short-term training programs, site administrators and coaches discussed challenges identifying clients for whom the tool adds value—that is, clients who were "ready" as discussed in section 5.1. CLIFF functionality focuses mostly on long-term planning; however, the coaches at these organizations reported that most clients were not interested in longer-term career planning; they cared about short-term outcomes and just wanted a job immediately. In contrast, the human services agencies and the nonprofits with more in-depth counseling models reported that the tools typically helped clients focus on their long-term career and financial goals.

Further, job center coaches were more likely than coaches at other types of institutions to report that clients lacked the technical training and computer literacy to understand the charts in the tools. In these situations, coaches would avoid using the tools out of fear of making clients uncomfortable or feel intimidated. These constraints led coaches to use the CLIFF tools less frequently, focusing only on a small subset of clients who were interested in longer-term career exploration.

Job center coaches were also more likely than coaches at other types of institutions to report administrative barriers to adoption. They reported less time to use the tools. Their counseling sessions were less frequent, shorter, and involved multiple administrative tasks in addition to the CLIFF tools. Coaches at job centers reported that they did not use the public assistance functionalities of CLIFF tools because they had neither time nor expertise to talk about public assistance losses. When job center coaches used the tools with clients, they tended to focus only on the career exploration functionality.

Section 6: Discussion

The implementation evaluation of the CLIFF Tools National Pilot revealed that organizations had varying degrees of success in implementing the program. Many of the implementation challenges we find can be put into a broader context by returning to the assumptions of the logic model. In section 4, we described several assumptions implicit in the logic model. In general, it assumes that organizations can effectively integrate the CLIFF tools into their organizations, that staff enroll and complete training, that trained coaches effectively incorporate CLIFF into their coaching sessions, and that clients are comfortable sharing information and using the tool. Our implementation evaluation reveals assumptions that were hard to meet in practice. For example, it revealed that organizations often struggled to integrate CLIFF due to challenges in identifying the target population and training coaches given high staff turnover. Coaches received training, as assumed by the model, but sometimes lacked the additional training on public assistance rules and eligibility needed to explain the tool output to clients. Clients were not always comfortable sharing the personal information needed to use the CLIFF tools, and they were not always interested in all the tools' features. With this broader context in mind, we turn now to reflect on the specific findings of the evaluation and to suggest processes for improved implementation going forward.

6.1 Summary of Findings

Identifying the target population

We found that CLIFF is most useful for individuals who are financially stable and ready to plan for the longer term. Some coaches reported that CLIFF was not helpful for clients who were in "survival" situations and focused only on short-term goals such as securing housing, paying off debt, or just getting any job no matter the pay. The finding that such clients did not express interest in the wage or benefits projections provided by CLIFF is consistent with the literature cited in Section 2, which offers good reasons to believe that these CLIFF clients in survival mode would heavily discount the future or focus their attention on paying their immediate expenses. In our literature review, we also gave examples of interventions designed to help individuals overcome the limited focus on the present and plan for the longer term (Haushofer and Salicath 2023). Such interventions, either existing or newly created, may help future adopters of CLIFF more effectively use the tools with clients in survival mode.

Integrating CLIFF into organization operations

The most common challenges with integrating CLIFF into organization operations were staffing constraints and the lack of sufficient time to use CLIFF. High turnover, which interview and

focus group subjects attributed mostly to the COVID-19 pandemic, and the associated need to retrain staff to use CLIFF, disrupted the implementation. Major public health and economic shocks such as COVID-19 are unpredictable and will always be a potential barrier to the implementation of a tool such as CLIFF. We may gain more understanding of the usefulness CLIFF as organizations continue to employ it in different economic and public health contexts.

Many of these integration challenges that we identified reflect broader challenges in the human services fields. High turnover in social services organizations is a documented challenge (see Kim and Stoner 2008; Gaffney, Glosser, and Agoncilllo 2018; Haffield 2022) that COVID-19 exacerbated. Lushin et al. (2023) finds that work-related burnout is strongly associated with job turnover intentions and low job satisfaction during the pandemic. The authors propose that minimizing administrative burdens, such as paperwork requirements, can help reduce levels of work-related burnout. Successful future implementations of CLIFF likely depend on the approaches that organizations take to manage burnout, administrative burden, and turnover.

Integrating CLIFF into counseling sessions

We identified two main issues related to counseling in our evaluation. First, coaches sometimes struggled to collect all the client information necessary to use the CLIFF tools. Second, some coaches felt unprepared to discuss benefits loss, particularly when those losses presented severe financial challenges.

We also learned that it was frequently up to the coaches to decide how and when to incorporate CLIFF into their sessions. As a result, many coaches used CLIFF with clients who were unlikely to benefit from the tool (for example, people facing a financial crisis) or did not use it at all. Many coaches reported they lacked the time to use CLIFF with clients. Other responsibilities, along with uncertain or low client interest in CLIFF, reduced usage in some organizations. This same issue was identified in a 2007 study of a tool, with a model and rationale similar to the CLIFF tools, called the Work Advancement and Support Center (WASC) Work Advancement Calculator. When integrating the WASC calculator into operations at several workforce centers, one of the centers noted that coaches had difficulty fitting the calculator into client sessions due to heavy client loads and because coaches did not see using the tool as a priority. They reported, "With more [clients] to see, there is less time to spend with each one, and using the calculator does not always remain a priority for the appointment" (Tessler and Seith 2007, 75).

6.2 Future Directions

The CLIFF Tools National Pilot and Implementation Evaluation were designed to inform improvements of the tools (for example, usability), to identify best practices for successful implementation (for example, identifying the right target population), and to research the impact of public assistance calculators on economic mobility. Based on feedback, the CLIFF development team has already made several usability improvements, such as modifying the output chart design so that charts are readable even if printed in black-and-white. The CLIFF development team has also made improvements to facilitate adoption and use, such as a single portal where users can access all CLIFF tools in one place. We also released a new tool, called CLIFF Snapshot, designed for workers in "survival mode"; CLIFF Snapshot models immediate employment changes more suited to workers trying only to stabilize their finances rather than to develop a long-term career plan.

Future research with the CLIFF tools will take several directions. The CLIFF research team will continue to identify best practices for the use of CLIFF and to develop more specific implementation guidance. In section 4.2 *Training and procedures,* we explained the CLIFF tools pilot included only minimal procedures for organizations to follow. The pilot was structured as a formative study that provided us with the opportunity to learn more about best practices for organization and coach implementation. The results presented in this study suggest revisions to the training protocols, such as providing more guidance to organizations for identifying the target population at a screening stage and providing dedicated time to coaches to use CLIFF.

The evaluation also suggests that more training and tool improvements may help coaches take steps earlier on to collect client information or be able to use the tool effectively with only partial client data. Issues of time management and data gathering could be addressed by developing clearer, more detailed guidance for site administrators and coaches on integrating CLIFF into organizational operations, screening procedures to target clients, and appropriate phases in the counseling process for CLIFF utilization. Furthermore, if organizations want coaches to discuss public assistance loss in the context of career advancement our findings suggest that coaches will need more training—and a tool is not enough. Coaches should know the basic details of all major public assistance programs and be prepared with a set of coaching strategies to help workers manage public assistance loss. To our best knowledge, no such coaching curriculum exists. Training, like the Advancing Careers Academy, could become more helpful by including case studies and scenarios that depict general strategies to coach clients around public assistance losses in the context of career advancement.

More work needs to be done before a more complete version of CLIFF implementation procedures is developed, particularly on benefit cliff-specific coaching procedures and using

the full functionality of the CLIFF tool. We also plan to study the implementation of CLIFF in new organizational types, such as employers.

Additional research will seek to study the outcomes of using CLIFF, both short-term outcomes such as training enrollment and choice and longer-term outcomes such as achieving financial self-sufficiency. This research can be conducted using different methodological approaches. One promising approach would be a randomized controlled trial, where organizations and clients are randomly assigned to use CLIFF. This research design would facilitate causal identification of the impact of CLIFF on the outcomes of interest.

References

Albelda, Randy, and Jennifer Shea. 2010. "To Work More or Not to Work More: Difficult Choices, Complex Decisions for Low-Wage Parents." *Journal of Poverty* 14 (3): 245–65. https://doi.org/10.1080/10875549.2010.494937.

Altig, David, Elias Ilin, Alexander Ruder, and Ellyn Terry. 2020. "Benefits Cliffs and the Financial Incentives for Career Advancement: A Case Study of the Health Care Services Career Pathway." Community and Economic Development Discussion Papers. Federal Reserve Bank of Atlanta. https://doi.org/10.29338/dp2020-01.

Altman, Douglas G. 1990. *Practical Statistics for Medical Research*. New York: Chapman and Hall/CRC. https://doi.org/10.1201/9780429258589.

Anderson, Theresa, Elaine Maag, Amelia Coffey, Kevin Werner, Hannah Daly, and Heather Hahn. 2022. "Balancing at the Edge of the Cliff." Research Report. Urban Institute. https://www.urban.org/research/publication/balancing-edge-cliff.

Baker, Rachel, Eric Bettinger, Brian Jacob, and Ioana Marinescu. 2018. "The Effect of Labor Market Information on Community College Students' Major Choice." *Economics of Education Review* 65: 18–30. https://www.nber.org/system/files/working_papers/w23333/w23333.pdf.

Blustein, David L. 2011. "Vocational Psychology at the Fork in the Road: Staying the Course or Taking the Road Less Traveled." *Journal of Career Assessment* 19 (3): 316–22. https://doi.org/10.1177/0894845320949706.

Boone, Norman M. 2000. "Retirement Calculator Shoot-Out." *Journal of Retirement Planning* 3 (6): 5–13. https://heinonline.org/HOL/Page?handle=hein.journals/jrlrp3&id=243&collection=usjo urnals&index=.

Campbell, John L., Charles Quincy, Jordan Osserman, and Ove K. Pedersen. 2013. "Coding In-Depth Semistructured Interviews: Problems of Unitization and Intercoder Reliability and Agreement." *Sociological Methods & Research* 42 (3): 294–320. https://doi.org/10.1177/0049124113500475.

Cofie, Nicholas, Heather Braund, and Nancy Dalgarno. 2022. "Eight Ways to Get a Grip on Intercoder Reliability Using Qualitative-Based Measures." *Canadian Medical Education Journal* 13 (2): 73–76. https://doi.org/10.36834/cmej.72504.

De Bruijn, Ernst-Jan, and Gerrit Antonides. 2022. "Poverty and Economic Decision Making: A Review of Scarcity Theory." *Theory and Decision* 92 (1): 5–37. https://doi.org/10.1007/s11238-021-09802-7.

Fryer, Roland G. 2016. "Information, Non-Financial Incentives, and Student Achievement: Evidence from a Text Messaging Experiment." *Journal of Public Economics* 144: 109–21. https://doi.org/10.1016/j.jpubeco.2016.10.009.

Gaffney, Angela, Asaph Glosser, and Crystal Agoncillo. 2018. "Organizational Culture in TANF Offices: A Review of the Literature." OPRE Report. Office of Planning, Research, and Evaluation, the Administration for Children and Families. https://www.acf.hhs.gov/opre/report/organizational-culture-tanf-offices-review-literature.

Gertler, Paul J., Sebastian Martinez, Patrick Premand, Laura B. Rawlings, and Christel M. J. Vermeersch. 2016. *Impact Evaluation in Practice*. 2nd ed. World Bank. https://www.worldbank.org/en/programs/sief-trust-fund/publication/impact- evaluation-in-practice.

Gibson, Donna M., and Julia V. Taylor. 2016. "Using the Genogram for Career Assessment and Intervention with an Economically Disadvantaged Client." In *A Handbook of Culture, Context, and Cases*, edited by Louis A. Busacca and Mark C. Rehfuss, 1st ed. American Counseling Association.

Gibson, William, and Andrew Brown. 2009. *Working with Qualitative Data*. London, England: SAGE Publications, Ltd.

Graneheim, Ulla H., Britt-Marie Lindgren, and Berit Lundman. 2017. "Methodological Challenges in Qualitative Content Analysis: A Discussion Paper." *Nurse Education Today* 56: 29–34. https://doi.org/10.1016/j.nedt.2017.06.002.

Haaland, Ingar, Christopher Roth, and Johannes Wohlfart. 2023. "Designing Information Provision Experiments." *Journal of Economic Literature* 61 (1): 3–40. https://doi.org/10.1257/jel.20211658.

Haffield, Laura. 2022. "Tackling Turnover: How Agencies Are Supporting and Sustaining Their Workforce." *American Public Human Services Association* (blog). https://aphsa.org/APHSABlog/ahhsw/tackling-turnover-how-agencies-are-supporting- and-sustaining.aspx.

Haushofer, Johannes, and Ernst Fehr. 2014. "On the Psychology of Poverty." *Science* 344 (6186): 862–67. https://doi.org/10.1126/science.1232491.

Haushofer, Johannes, and Daniel Salicath. 2023. "The Psychology of Poverty: Where Do We Stand?" 31977. Working Paper Series. National Bureau of Economic Research. https://doi.org/10.3386/w31977.

Heppner, Mary, and Karen O'Brien. 2006. "Women and Poverty: A Holistic Approach to Vocational Interventions." In *Handbook of Career Counseling for Women*, edited by Mary Heppner and Bruce Walsh, 1st ed., 85–112. Routledge.

Hershfield, Hal E., Daniel G. Goldstein, William F. Sharpe, Jesse Fox, Leo Yeykelis, Laura L. Carstensen, and Jeremy N. Bailenson. 2011. "Increasing Saving Behavior Through Age-Progressed Renderings of the Future Self." *Journal of Marketing Research* 48 (Special Issue): 23–37. https://doi.org/10.1509/jmkr.48.SPL.S23.

Holland, John L. 1997. *Making Vocational Choices: A Theory of Vocational Personalities and Work Environments*. 3rd ed. Odessa, Florida: Psychological Assessment Resources.

Ilin, Elias, and Ellyn Terry. 2022. "Estimating Occupation and Location Specific Wages over the Life Cycle." *Business and Economic Research* 12 (2): 46. https://doi.org/10.5296/ber.v12i2.19731.

Jensen, Robert. 2010. "The (Perceived) Returns to Education and the Demand for Schooling." *Quarterly Journal of Economics* 125 (2): 515–48. https://doi.org/10.1162/qjec.2010.125.2.515.

Kim, Hansung, and Madeleine Stoner. 2008. "Burnout and Turnover Intention Among Social Workers: Effects of Role Stress, Job Autonomy and Social Support." *Administration in Social Work* 32 (3): 5–25. https://doi.org/10.1080/03643100801922357.

Kosciulek, John F., Brian N. Phillips, and Michelle C. Lizotte. 2015. "Trait–Factor Theory and Counseling Process." In *Counseling Theories and Techniques for Rehabilitation and Mental Health Professionals*, edited by Fong Chan, Norman L. Berven, and Kenneth R. Thomas, 2nd ed. New York, NY: Springer Publishing Company. https://doi.org/10.1891/9780826198686.0008.

Leung, S. Alvin. 2022. "New Frontiers in Computer-Assisted Career Guidance Systems (CACGS): Implications from Career Construction Theory." *Frontiers in Psychology* 13: 1–21. https://doi.org/10.3389/fpsyg.2022.786232.

Lushin, Victor, Colleen C. Katz, Francie J. Julien-Chinn, and Marina Lalayants. 2023. "A Burdened Workforce: Exploring Burnout, Job Satisfaction and Turnover among Child Welfare Caseworkers in the Era of COVID-19." *Children and Youth Services Review* 148. https://doi.org/10.1016/j.childyouth.2023.106910.

Mayer, Robert N., Cathleen D. Zick, and Mitchell Marsden. 2011. "Does Calculating Retirement Needs Boost Retirement Savings?" *Journal of Consumer Affairs* 45 (2): 175–200. https://doi.org/10.1111/j.1745-6606.2011.01199.x.

Mullainathan, Sendhil, and Eldar Shafir. 2014. *Scarcity: The New Science of Having Less and How It Defines Our Lives*. First Picador edition. New York, NY: Picador/Henry Holt and Co.

O'Connor, Cliodhna, and Helene Joffe. 2020. "Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines." *International Journal of Qualitative Methods* 19: 1–13. https://doi.org/10.1177/1609406919899220.

Parsons, Frank. 1909. *Choosing a Vocation*. Boston and New York: The Riverside Press Cambridge. https://openlibrary.org/books/OL7042543M/Choosing_a_vocation.

Ravitch, Sharon M., and Nicole Mittenfelner Carl. 2021. *Qualitative Research: Bridging the Conceptual, Theoretical, and Methodological*. Second edition. Los Angeles London New Delhi Singapore Washington DC Melbourne: SAGE.

Rogers, Christina. 2023. "Developing Professional School Counselor Self-Efficacy and Competence to Broach Career Conversations in K-12 through an Online Professional Development Training." Dissertation. Oregon State University.

Romich, Jennifer L. 2006. "Difficult Calculations: Low-Income Workers and Marginal Tax Rates." *Social Service Review* 80 (1): 27–66. https://doi.org/10.1086/499086.

Rounds, James, Rong Su, Phil Lewis, and David Rivkin. 2013. "Occupational Interest Profiles for New and Emerging Occupations in the O*NET System: Summary." National Center for O*NET Development. https://www.onetcenter.org/reports/OIP_NewEmerging.html.

Ruder, Alexander, Julie Siwicki, Ellyn Terry, and Tamilore Toyin-Adelaja. 2020. "Benefits Cliffs as a Barrier to Career Advancement for Low-Income Adults: Insights from Employment Services Providers." Community and Economic Development Discussion Papers. Federal Reserve Bank of Atlanta. http://dx.doi.org/10.29338/dp2020-02.

Ruder, Alexander and Sopher, Barry. 2015. "The Value of Information for Choices of Education and Training: Experimental Evidence on Customer-Focused Scorecard Performance Reporting Systems." In *Association of Public Policy Analysis and Management Fall Research Conference*. Miami, Florida.

Schard, Robin C. 2001. "Internet Resources for Retirement Planning." *Elder's Advisor*, 2001. : http://scholarship.law.marquette.edu/elders/vol2/iss4/11.

Shah, Anuj K., Sendhil Mullainathan, and Eldar Shafir. 2012. "Some Consequences of Having Too Little." *Science* 338 (6107): 682–85. https://doi.org/10.1126/science.1222426.

Tessler, Betsy, and David Seith. 2007. "From Getting By to Getting Ahead: Navigating Career Advancement for Low-Wage Workers." The Work Advancement and Support Center Demonstration. MDRC. https://www.dol.gov/sites/dolgov/files/ETA/research/pdfs/wasc_5.pdf.

VanDerhei, Jack, and Adams Nevin. 2013. "A Little Help: The Impact of On-Line Calculators and Financial Advisors on Setting Adequate Retirement-Savings Targets: Evidence from the 2013 Retirement Confidence Survey." *Employee Benefit Research Institute Notes*. https://ssrn.com/abstract=2244409.

Winston, Pamela, Nina Chien, Rachel Gaddes, and Rachel Holzwart. 2021. "Complex Rules and Barriers to Self-Sufficiency in Safety Net Programs: Perspectives of Working Parents." Brief. Office of the Assistant Secretary for Planning and Evaluation. https://aspe.hhs.gov/reports/complex-rules-barriers-self-sufficiency-safety-net-programs .

Wiswall, Matthew, and Basit Zafar. 2015. "Determinants of College Major Choice: Identification Using an Information Experiment." *The Review of Economic Studies* 82 (2): 791–824. https://doi.org/10.1093/restud/rdu044.

Appendix 1: Interview and Focus Group Instruments

Appendix 1.1 Instrument: One-On-One Interview with the Site Administrator

Interviewer script: *Now I'd like to understand how you are implementing CLIFF within the organization.*

1) Tell me a little about how CLIFF got started at your organization. How did you learn about CLIFF? Who in your organization first suggested it be adopted?
2) Who at your organization is responsible for the pilot's successful implementation?
3) What processes are in place to support the implementation?
    a) Follow up: How are you tracking training and usage of CLIFF?
    b) Follow up: What challenges have you faced in adopting CLIFF? How have these challenges been overcome? Do you feel the implementation has been successful?
4) Have you implemented any programmatic changes intended to make CLIFF a part of your process (such as system codes added, curriculum changes, internal manual changes, etc.)?
5) How do Job Seekers find out about CLIFF? Is it advertised anywhere?
6) Did your organization make any programmatic changes (such as system codes added, curriculum changes, internal manual changes, etc.) to facilitate the CLIFF implementation?
7) I have a few questions about the staff that use CLIFF with clients.
    a) How was it decided which coaches would use CLIFF for the pilot?
    b) What is the training and background of staff that use CLIFF?
    c) How were staff trained on CLIFF? (e.g., Advancing Careers Academy, virtually, peer-to-peer)
        i) What share of staff were trained through each method?
        ii) What share of staff using CLIFF have not received any training?
8) Have you made any changes in communication, coordination, and collaboration across systems (e.g., postsecondary educational institutions, workforce development agencies, social services agencies, and health care employers) when implementing CLIFF?

Interviewer script: *Now let's talk about how your staff are using CLIFF.*

9) Can you describe how staff have integrated CLIFF into their work?
    a) Note to interviewer: collect detailed feedback here. If there are multiple meetings with the client, we want to know at what meeting they use CLIFF, etc.

10) Is CLIFF required or optional?
    a) If optional, how do people opt-in and schedule a session (e.g., is there a form)? For what purpose are coaches supposed to be using CLIFF? (e.g., Financial coaching? Career coaching? Benefits eligibility determinations? Other?)
        i) Potential follow-up: What do you mean by financial coaching/career coaching/eligibility determinations?
11) Can you describe the types of clients whom you think CLIFF is useful for?
    a) What share of your total clients is that?
    b) What types of clients do you think CLIFF is not useful for?
    Potential follow-ups—is the target population:
        i) Those seeking to make a career plan.
        ii) Those looking for an immediate job placement.
        iii) Those interested in benefits eligibility.
        iv) Those worried about benefits cliffs.

Appendix 1.2 Instrument: Focus Groups with Coaches

1) Can you describe the types of clients whom you think CLIFF is useful for? What types of clients do you think CLIFF is not useful for?
    a) Potential follow-ups.—is the target population:
        i) Those seeking to make a career plan.
        ii) Those looking for an immediate job placement.
        iii) Those interested in benefits eligibility.
        iv) Those worried about benefits cliffs.
2) Do you use CLIFF with all your clients?
    a) If no, how do you decide which clients use CLIFF?

Interviewer script: *Let's talk a little about how you have integrated CLIFF into your work.*

3) What difficulties have you encountered in integrating CLIFF into your work? Have you overcome these difficulties?
4) For what purpose are you using CLIFF?
    a) E.g., Financial coaching? Career coaching? Benefits eligibility determinations? Other?
        i) Potential follow-up: what do you mean by financial coaching/career coaching/eligibility determinations?
5) What parts of the output do you find most useful?
6) Please describe the setting of a typical CLIFF session.
    a) Potential follow-ups:
        i) Is the tool used in a group session? Is it used virtually?
        ii) How long does it typically take to go through the CLIFF tool?
        iii) Is the session dedicated to using CLIFF or does it include other activities?
7) How is CLIFF output shared with clients (e.g., only during the session, email pdf follow-up, printout, etc.)?
8) How many clients have you used CLIFF with so far? (Ask each individual coach.)
    a) Is there any reason why you have not used CLIFF more?
        i) Potential follow-ups: are there issues with functionality or lack of features?
        ii) Potential follow-ups: did you increase or decrease usage over the course of the pilot?
9) Based on your experience so far, would you recommend the continued use of CLIFF? Why or why not?

Appendix 1.3 Instrument: Focus Group with Job Seekers

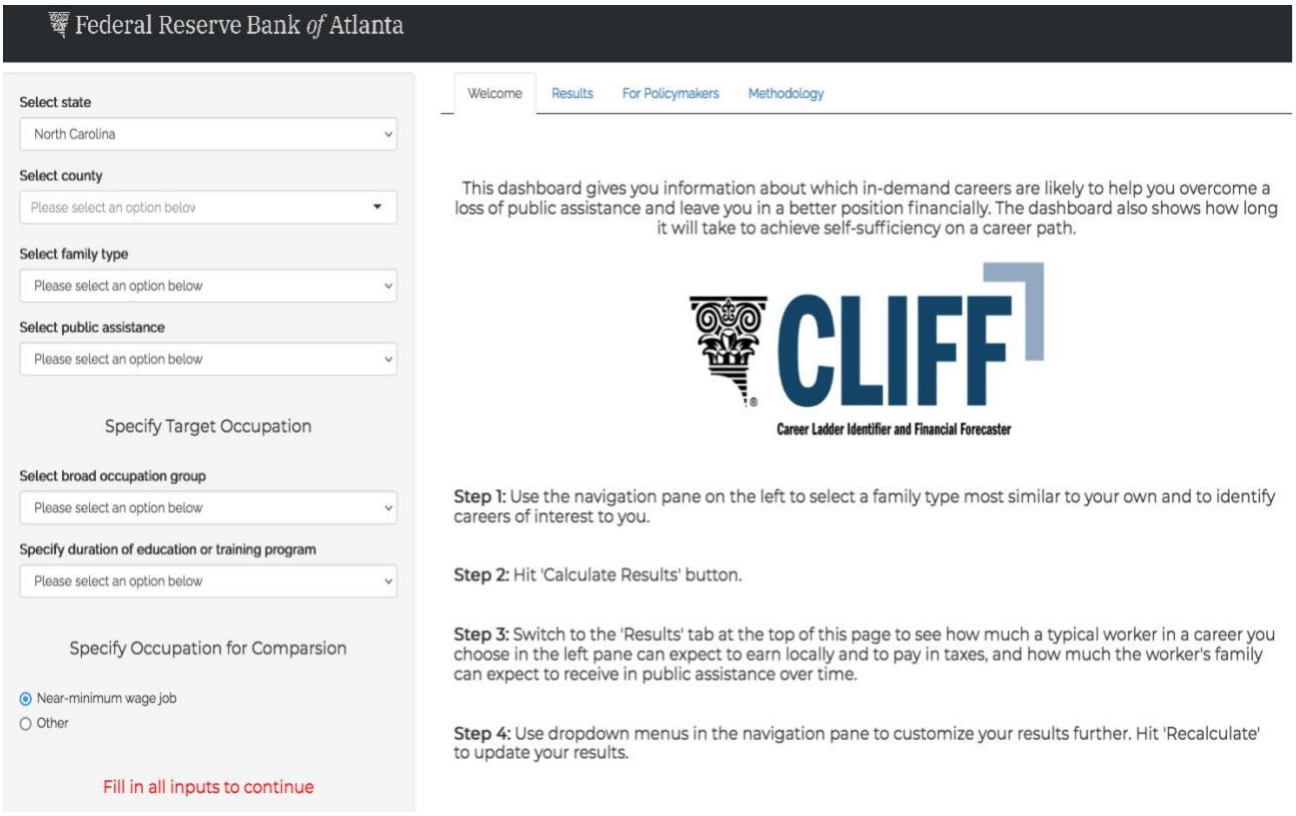
1) Why did you come to the <organization name>?
    a) Potential follow-up: Were you looking for a job, career coaching and advancement, benefits coaching, or something else?
2) How was CLIFF described to you and why did you use CLIFF?
3) Did the coach/case worker/coach help you understand the information produced by CLIFF?
4) How many minutes did you spend discussing the output?
5) Was there any information from CLIFF that was difficult to understand?
    a) *Note to interviewer: After allowing the participant to answer based on memory alone, show an example report to prompt further discussion.*
6) Did CLIFF offer you any new information to aid your decision, or have you seen this information elsewhere?
7) Do you think the information provided by CLIFF is accurate? Did you trust the information?
    a) Note to interviewer: Follow up about each of the charts in the example report: income paths? Public assistance estimates? Cost of living estimates?
8) [If using CLIFF Planner] Were you asked to complete the information checklist prior to using CLIFF?
    a) Was there any information requested that you did not know the answer to?
9) [If using CLIFF Planner] Did you use the 'self-sufficiency target' expenses or enter your own?

Appendix 2: The CLIFF Tools

The following images are screens of the CLIFF Dashboard and Planner, chosen to highlight the main functionality of the tools used in the pilot. The displays reflect the version of the tools used in the pilot. Changes have been made since. For the most current version of the tools, see the Atlanta Fed's Advancing Careers website.

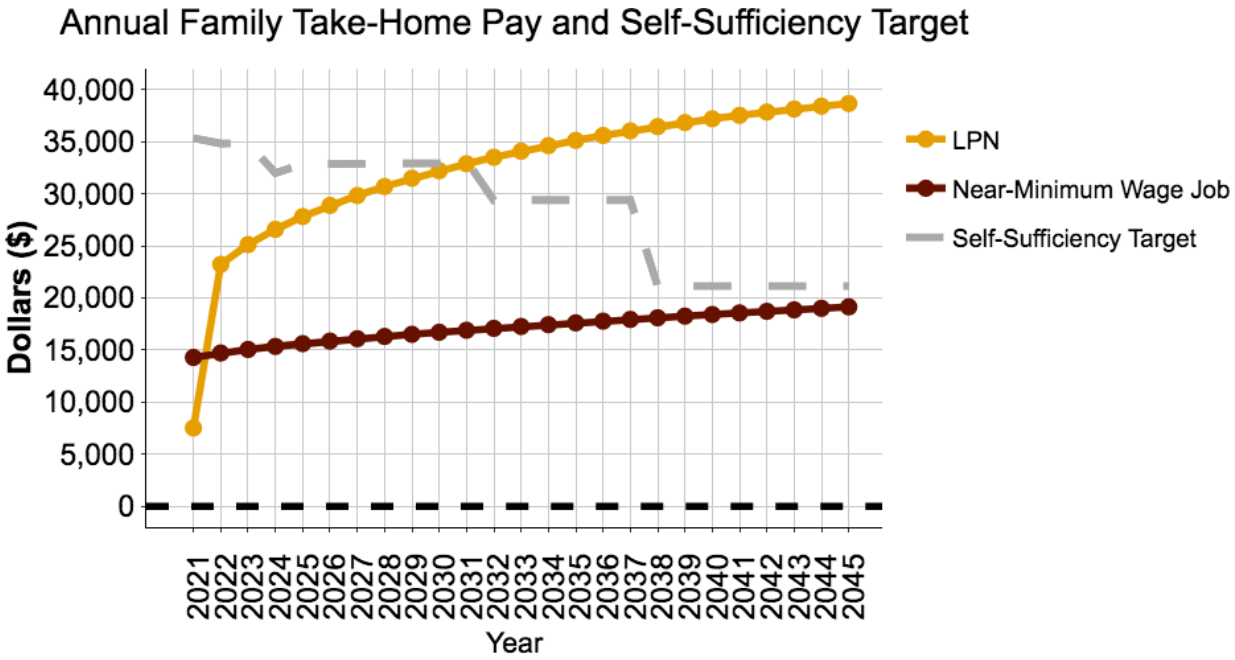
Appendix 2.1 CLIFF Dashboard

Figure 2.1A CLIFF Dashboard Homepage



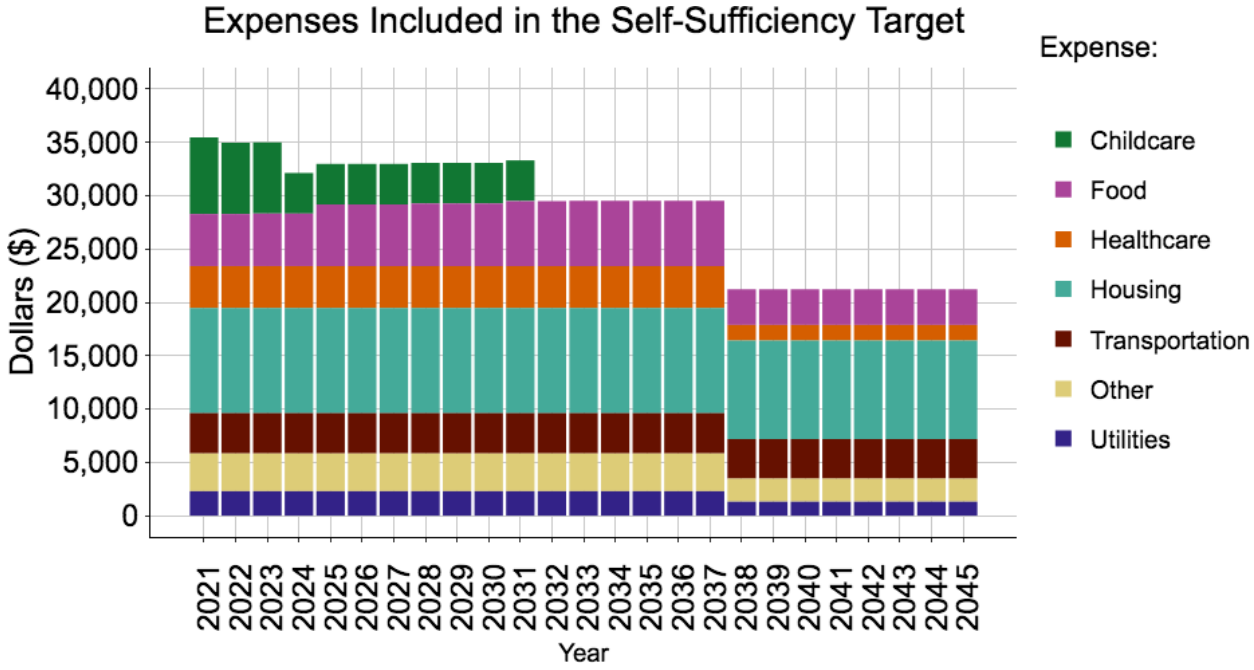
Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

Figure 2.1B: Income and Self-Sufficiency Target Chart



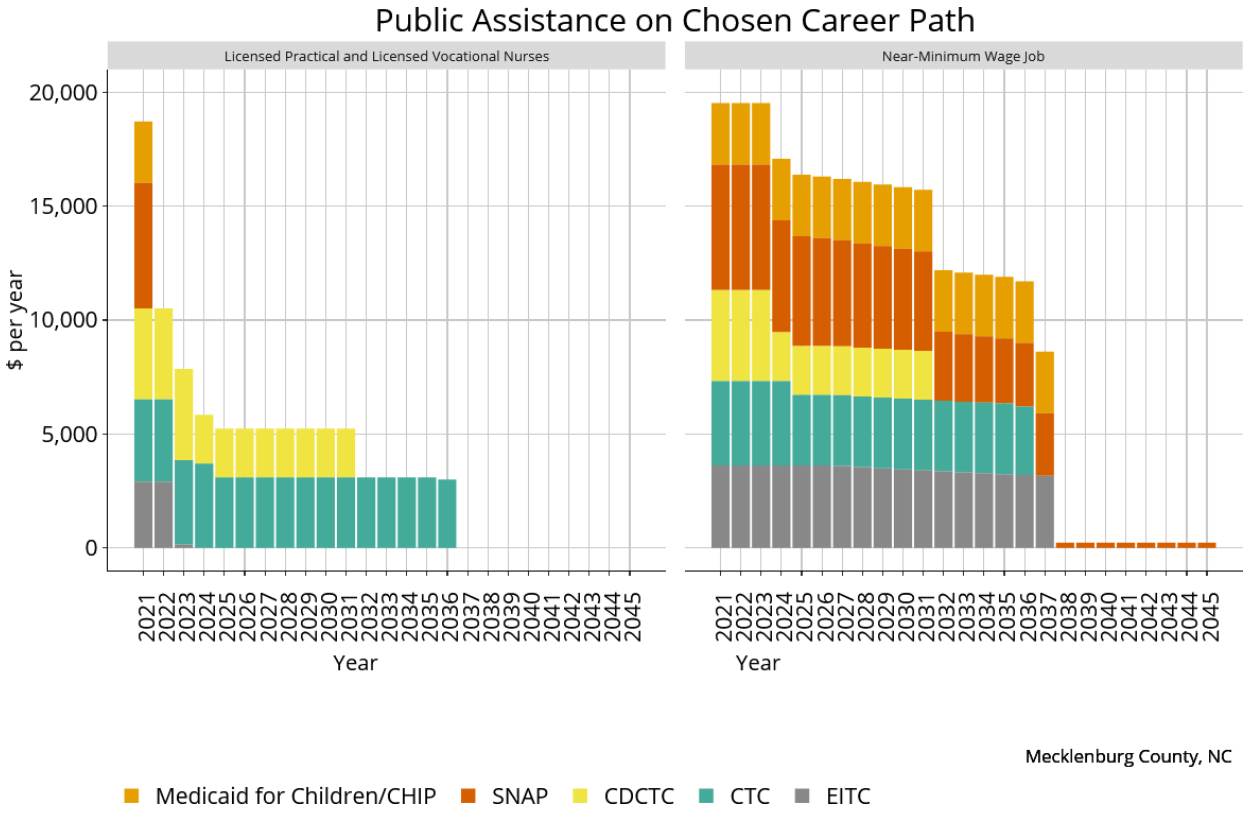
Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

Figure 2.1C: Expenses Over Time Chart



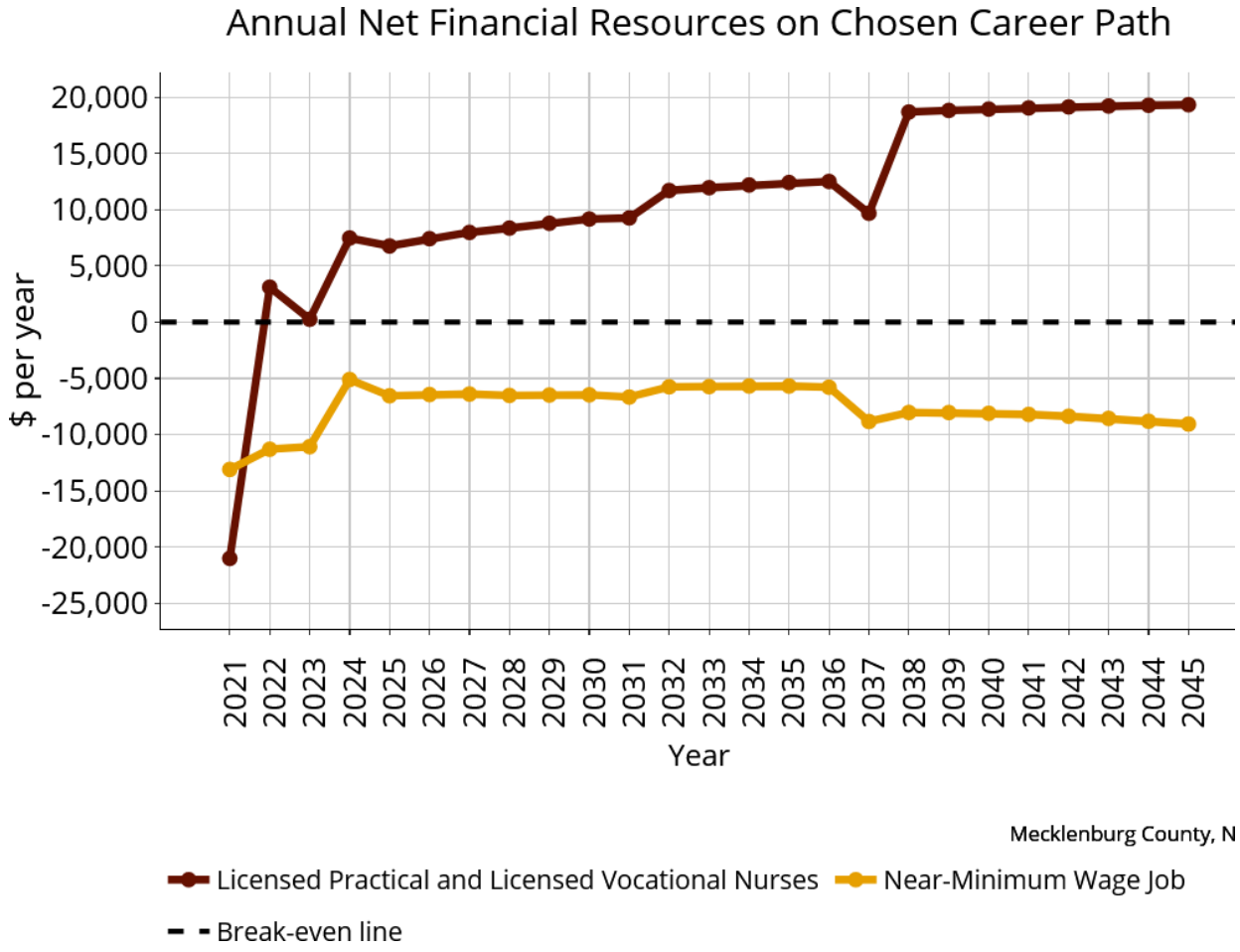
Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

Figure 2.1D: Public Assistance by Year for Two Careers



Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

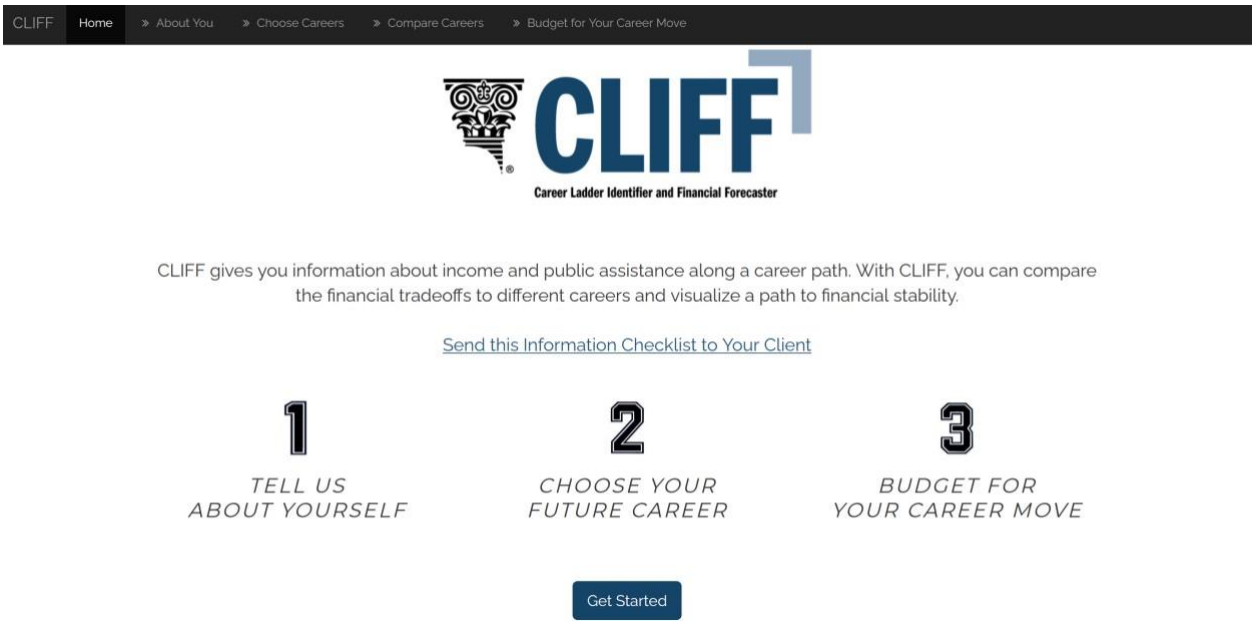
Figure 2.1E: Annual Net Financial Resources Over Time Chart



Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

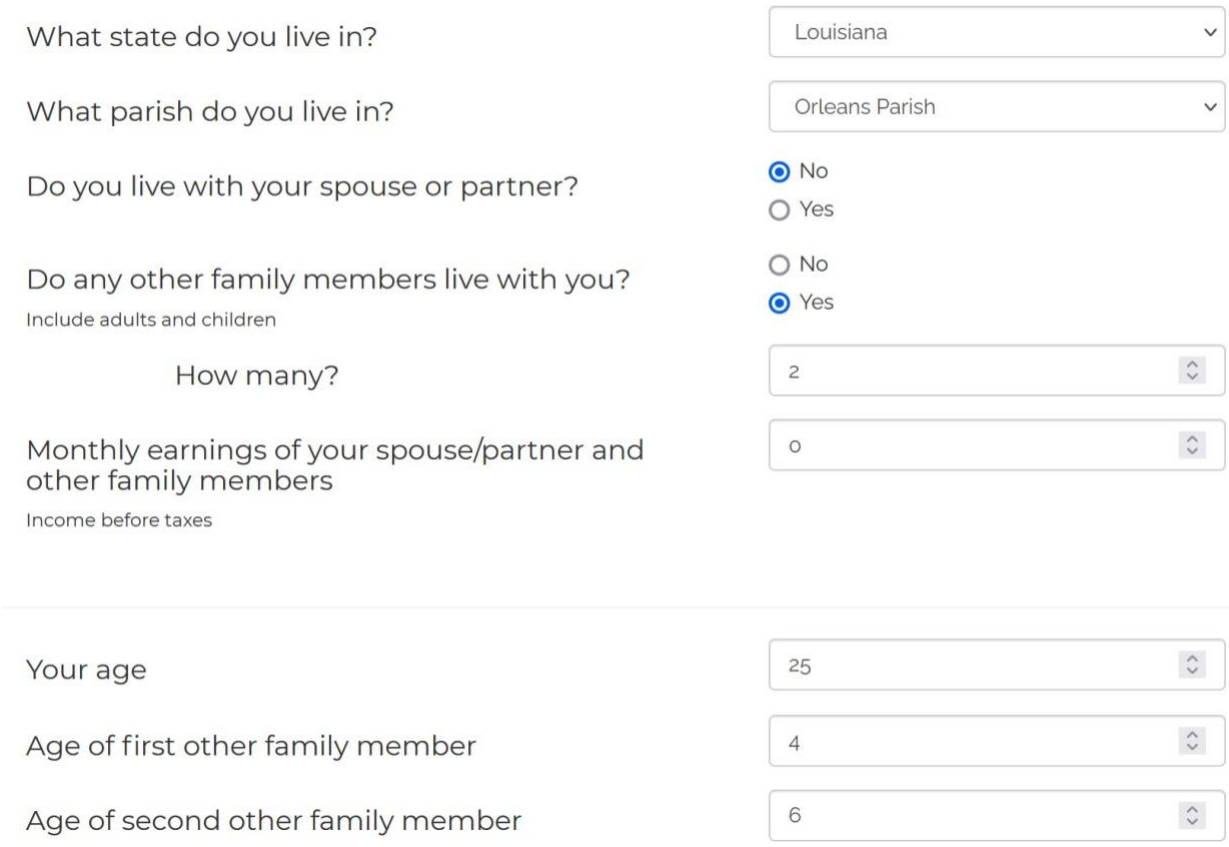
Appendix 2.2 CLIFF Planner

Figure 2.2A: CLIFF Planner Homepage



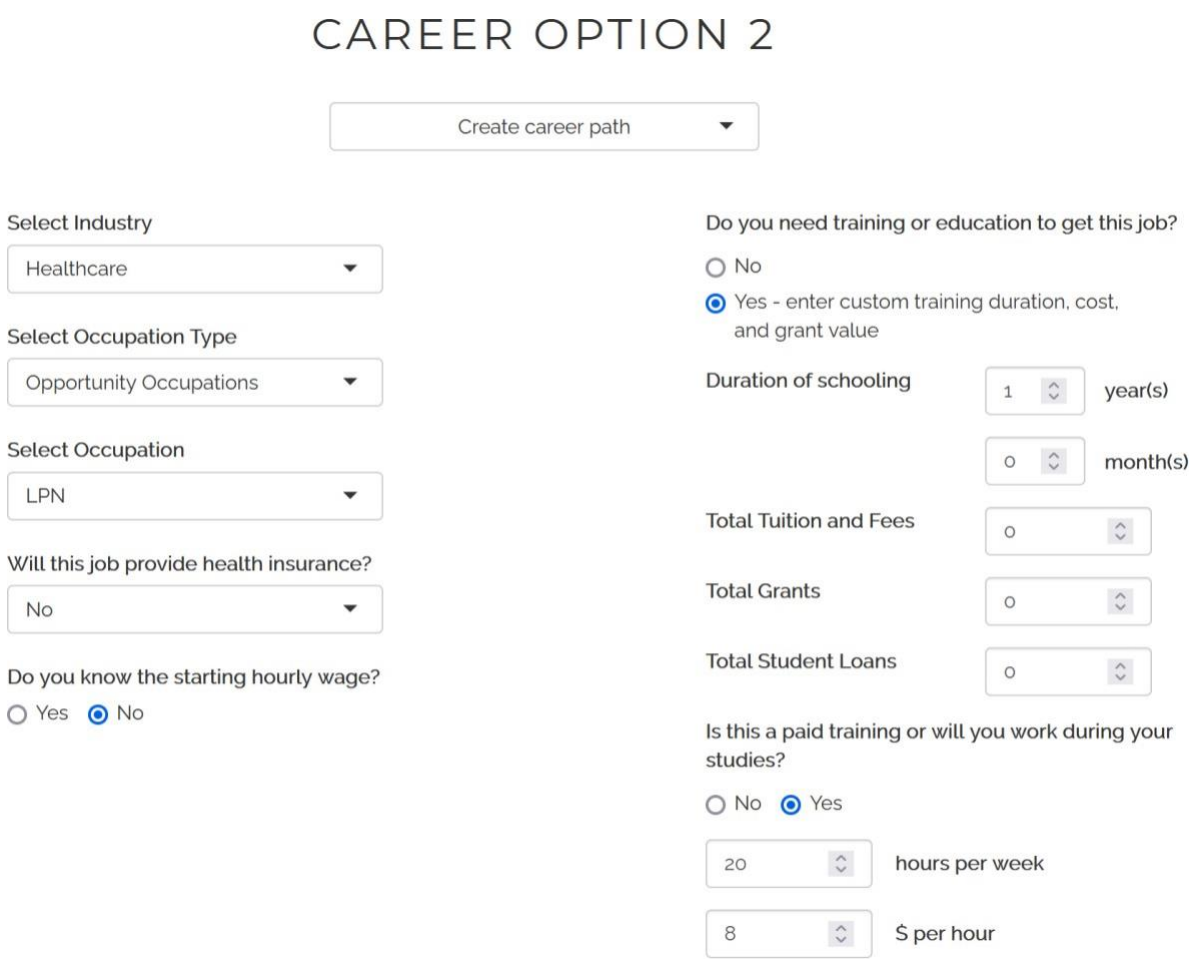
Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

Figure 2.2B: Client Information Entry Page



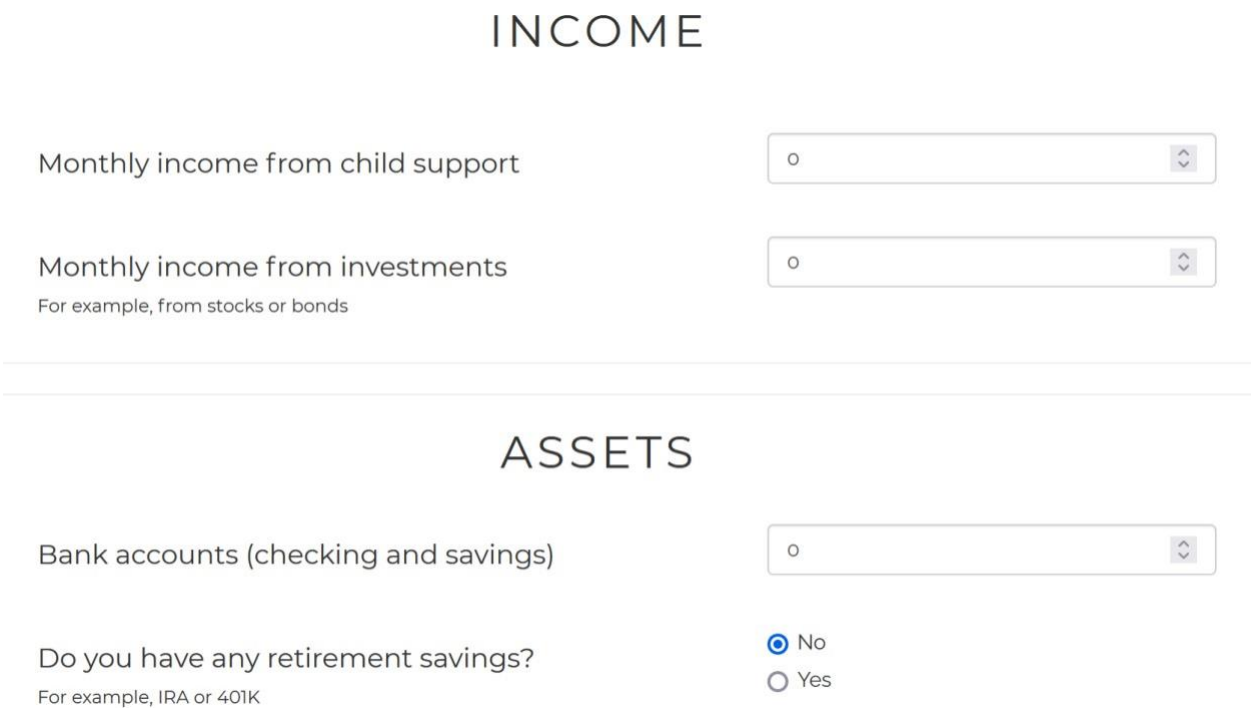
Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

Figure 2.2C: Client Career Entry Page



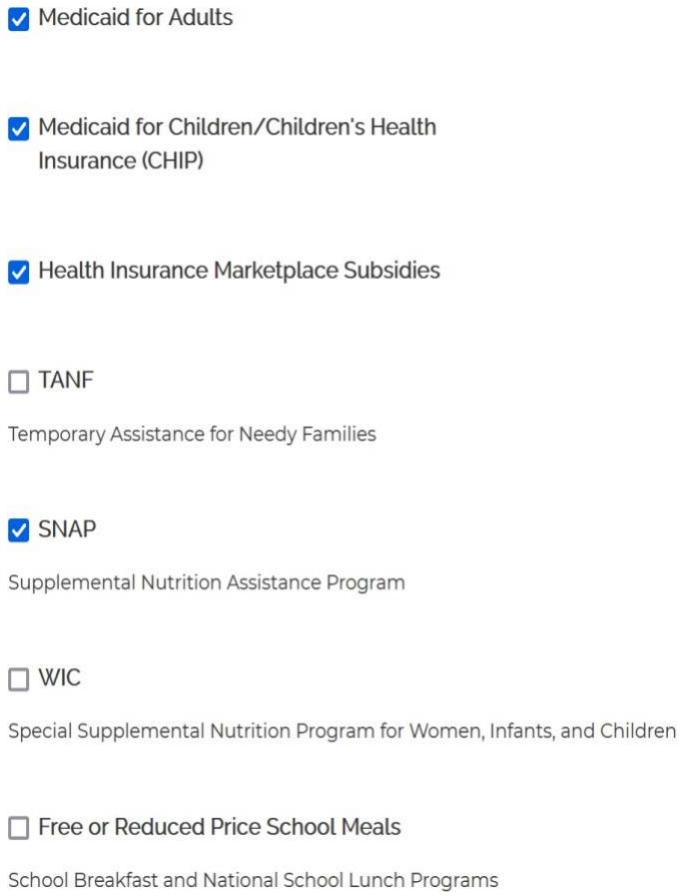
Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

Figure 2.2D: Client Income and Assets Entry Page



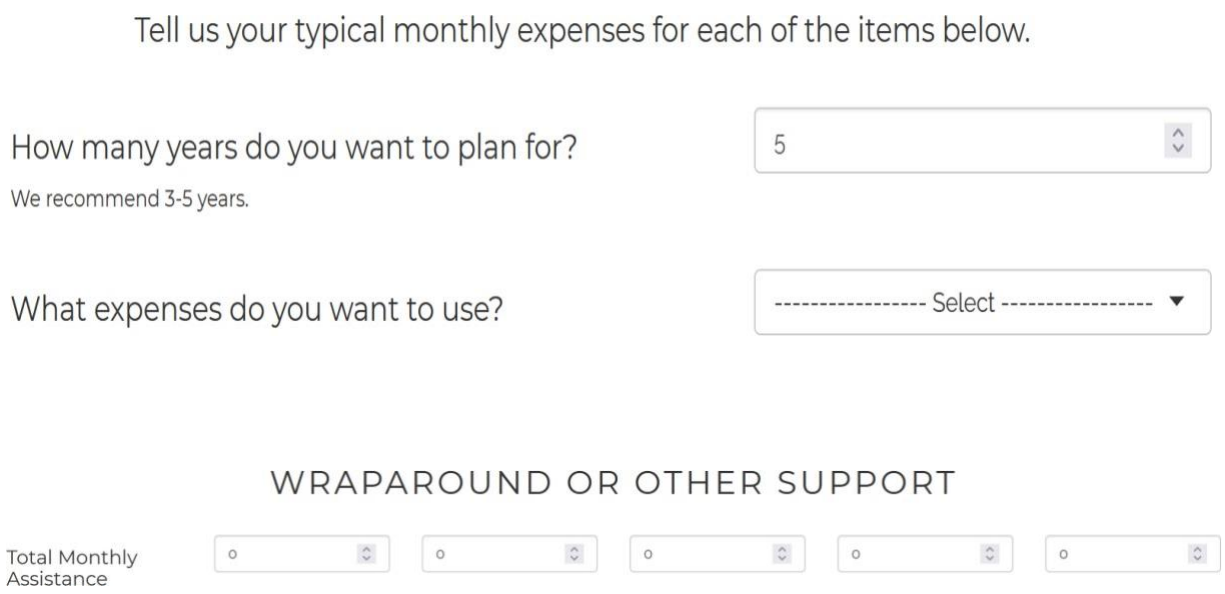
Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

Figure 2.2E: Client Public Assistance Selection Page



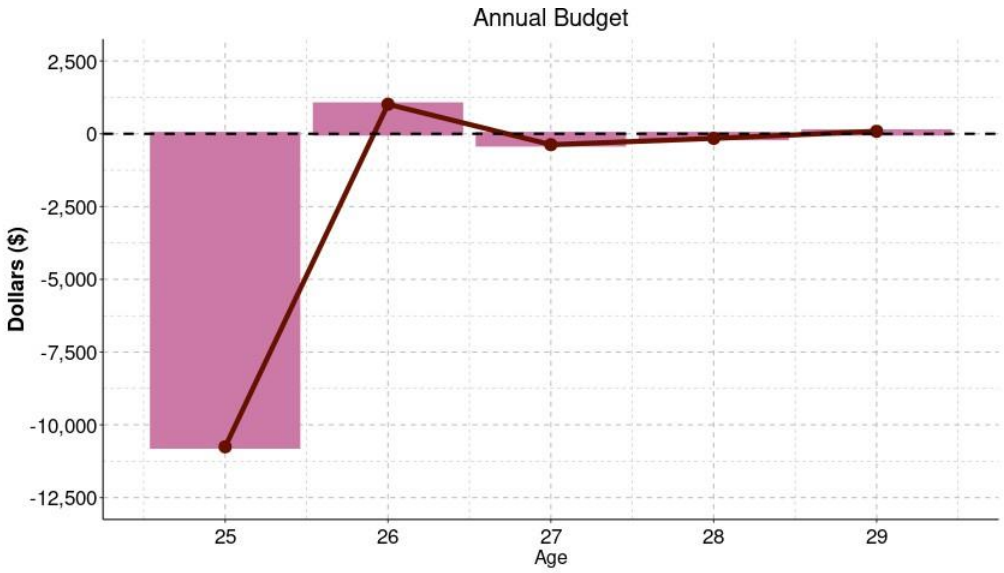
Source: authors. Some programs were omitted from this screenshot for brevity. Image is of the 2021 version of tool used in CLIFF pilot.

Figure 2.2F: Client Budget Entry Page



Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

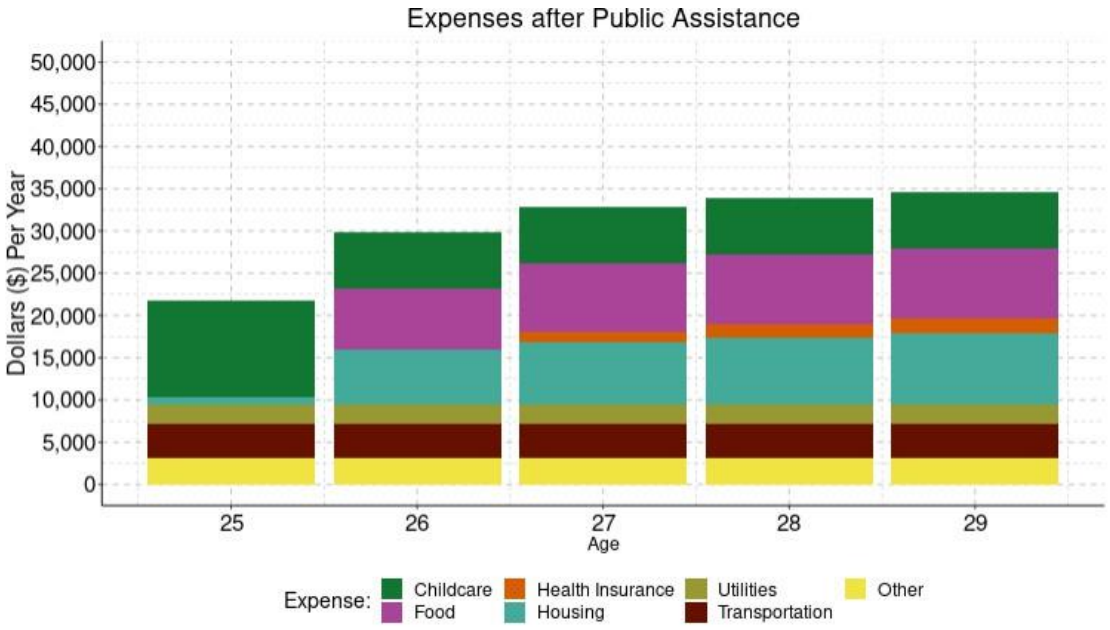
Figure 2.2G: Client Budget Results



	Year 1	Year 2	Year 3	Year 4	Year 5
+ Take-Home Pay	7382	25567	27754	29419	30803
+ Public Assistance	28854	17785	15554	14381	13400
+ Wraparound Support	0	0	0	0	0
- Living Expenses	46991	42338	43683	43957	44116
- Student Loan Repayments	0	0	0	0	0
- Repayment of Other Loans	0	0	0	0	0
- Out-of-Pocket Tuition	0	0	0	0	0
= Annual Budget	-10755	1014	-375	-157	87

Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

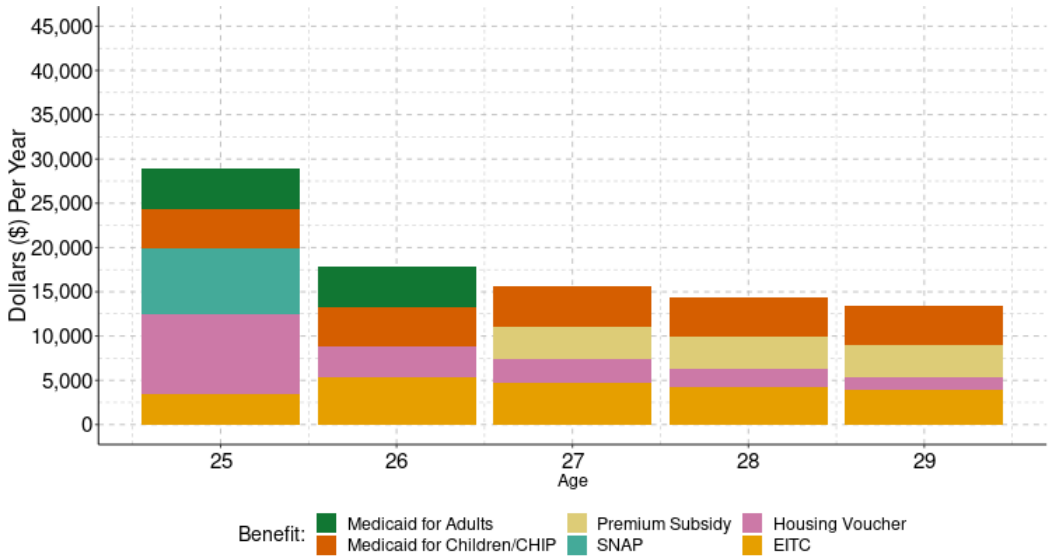
Figure 2.2H: Client Public Assistance Results



	Year 1	Year 2	Year 3	Year 4	Year 5
Rent or Mortgage	832	6395	7232	7870	8399
Utilities	2397	2397	2397	2397	2397
Child Care	11379	6726	6726	6726	6726
Health Insurance Premium	0	0	1311	1559	1780
Food (not including EBT purchases)	0	7278	8089	8179	8179
Transportation	4074	4074	4074	4074	4074
Other	3063	3063	3063	3063	3063
Student Loan Repayments	0	0	0	0	0
Repayment of Other Loans	0	0	0	0	0
Out-of-Pocket Tuition	0	0	0	0	0

Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

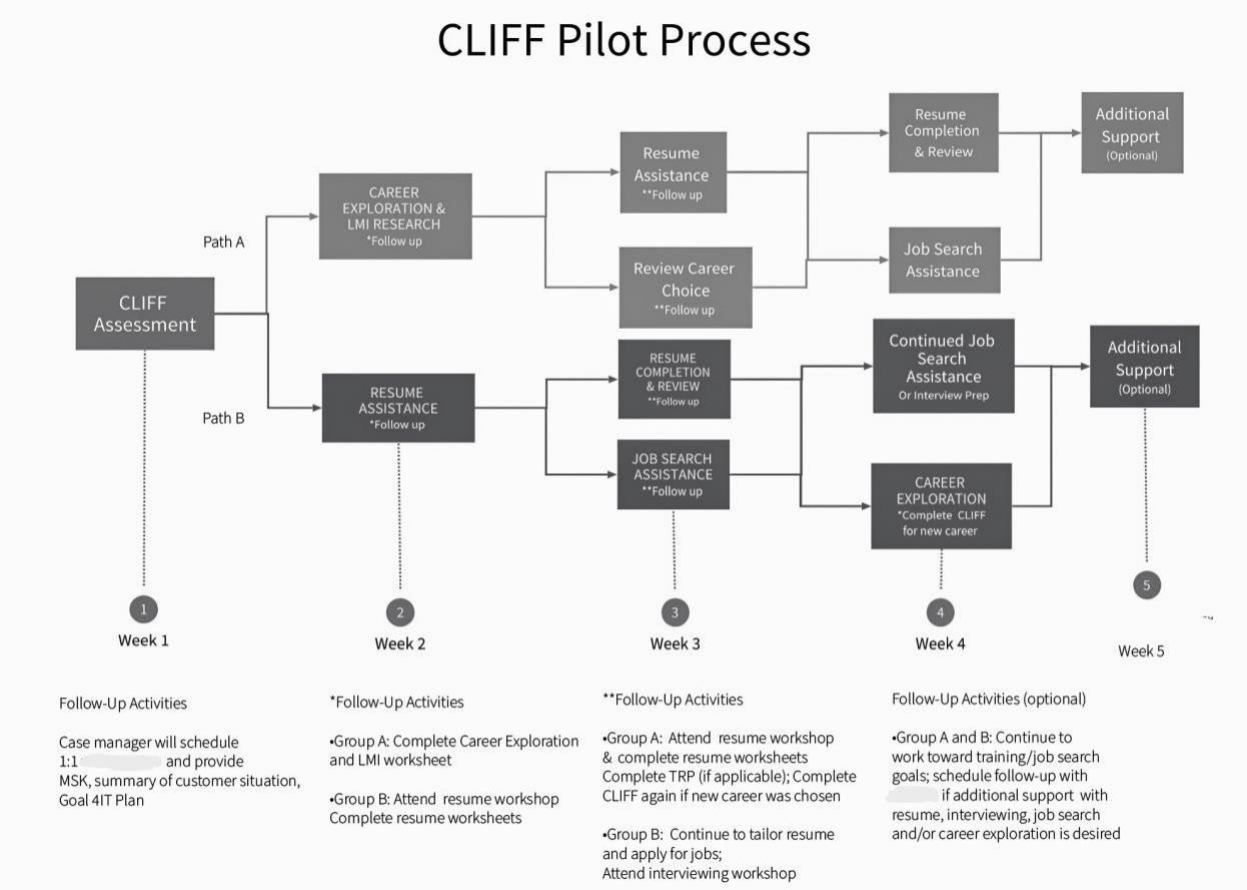
Figure 2.2I: Client Expenses after Public Assistance Results



	Year 1	Year 2	Year 3	Year 4	Year 5
Medicaid for Adults	4484	4484	0	0	0
Medicaid for Children/CHIP	4434	4434	4434	4434	4434
Premium Subsidy	0	0	3707	3643	3581
Childcare Subsidy	0	0	0	0	0
Head Start	0	0	0	0	0
Housing Voucher	9050	3487	2650	2012	1483
TANF	0	0	0	0	0
SNAP	7392	0	0	0	0
WIC	0	0	0	0	0
Subsidized School Meals	0	0	0	0	0
CDCTC	0	0	0	0	0
EITC	3494	5380	4763	4292	3902
CTC	0	0	0	0	0
Wraparound Support	0	0	0	0	0

Source: authors. Image is of the 2021 version of tool used in CLIFF pilot.

Appendix 3: CLIFF Pilot Flow Chart Example



Source: authors and anonymous pilot partner. Individual names were redacted to preserve anonymity.

Appendix 4: Creating the Final Codebook and Discerning Themes

We developed an initial codebook that consisted of higher-order code categories, subcodes, and definitions and examples of each code. To refine this codebook and code the data, we used the three-stage method recommended by Campbell et al. (2013): 1) developing a coding scheme based on a high level of intercoder reliability on a sample of transcripts; 2) adjudicating the remaining coding disagreements through negotiation among the coders to establish high levels of intercoder agreement; and 3) using the coding scheme developed in the sample on the full set of transcripts.

Two analysts used this initial codebook to separately code a 30 percent subset of the interview data. After coding the subset, the analysts discussed the codebook amongst themselves and with one of the lead researchers to identify and resolve disagreements about the meaning of codes. Similar codes were combined and codes that were not used were dropped. The codebook was also expanded to capture higher-order categories. Disagreements between the coders over the codes applied to specific units of text were discussed and either resolved or noted as disagreement.[12] We repeated this process for several iterations of coding and discussion until the researchers felt that intercoder reliability (selecting the same codes for the same unit of text) was high and the codebook could be consistently applied to the remainder of the interview data.

To assess the reliability of the coding technique, we estimate a quantitative intercoder reliability (ICR) score that measures how much researchers agree when coding the same dataset. Using the quantitative approach, we compute an intercoder reliability Kappa value of 0.45, which indicates moderate agreement between the coders (Altman 1990). In addition to reporting a quantitative ICR score, we also followed process-based guidelines to improve intercoder reliability, as recommended by Cofie, Braund, and Dalgarno (2022). They recommend eight process-based guidelines: 1) include a minimum of two coders; 2) at least one coder should be more removed from the data collection;[13] 3) at least one coder should have previous experience coding qualitative data; 4) a minimum of two researchers should code all interview transcripts; 5) coders should use the same inductive/deductive framework for analysis; 6) coders should focus on shared meaning of codes through dialogue and consensus; 7) another coder with qualitative expertise was consulted to resolve conflicts; 8) coder consensus should result in a codebook that can be applied to all remaining transcripts.[14]

We use this alternative approach in addition to the ICR for two reasons. First, there are known methodological challenges with using ICR scores on semi-structured interview data, particularly with the unitization of long blocks of text.[15] Second, some scholars have criticized the application of ICR scores because the practice applies a positivist research method to

[12] As we refined the codebook, all coding disagreements were eventually resolved.

[13] All coders, however, attended at least one interview. No coder or researcher attended all interviews.

[14] See Table 1 of Cofie, Braund, and Dalgarno (2022) for all eight process-based guidelines.

[15] Determining intercoder reliability in semi-structured interviews is difficult to do. According to Campbell et al. (2013), one reason for the difficulty is due to unitization. Unitization is determining the precise portions of the text that should be coded. Coders may choose to highlight slightly different strings of texts due to variation in what information a coder thinks is important and the conversational nature of semi-structured interviews that tends to result in tangents, digressions, and backtracks.

qualitative research, which inherently has an interpretivist epistemological paradigm (see O'Connor and Joffe (2020) for a review of this argument). [16]

Applying the codebook and discerning themes and their challenges

Once the coders had reached a satisfactory level of reliability and agreed on the codes applied to specific units of text, they applied the revised codebook to the remaining 70 percent of the data. With all the text coded, the two lead researchers independently clustered the coded text and accompanying categories into several themes and subthemes. The lead researchers discussed agreements and disagreements in their themes and then iteratively refined the coded text to create the final themes and subthemes used in the evaluation report.

[16] Interpretivist epistemologies commonly used in qualitative methods reject the notion of a single, objective, external "reality" that the scientific method can reveal. Thus, with this approach, qualitative researchers' role is not to reveal stability of findings across time or contexts, but to interpret and communicate the diversity of perspectives on a given topic.