

## **Impact Evaluation of Catholic Charities Padua Pilot: Analysis Plan**

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### **Introduction**

This analysis plan outlines planned analyses for the Impact Evaluation of the Padua Pilot operated by Catholic Charities Fort Worth (CCFW). The information in this document is aggregated from project grants submitted prior to the collection of outcomes data, as well as early analyses conducted after the first wave of followup (12-month outcomes) for roughly half of the analysis sample. Grant applications were first submitted in 2014 a year prior to enrollment, when the logistics of enrollment, recruitment, and randomization were decided. In 2015, the researchers registered the study with the AEA Registry and enrollment began. Enrollment completed in late 2016.

### **Study Overview**

*This section is from the AEA RCT Registry trial page published May 26, 2015*

This study will measure the impact of the Padua Pilot, an intensive case management intervention designed to permanently lift people out of poverty. The intervention has three key components: First, participants are assessed along many dimensions (skills and abilities, physical and mental health, resources, etc.) to determine their barriers to self-sufficiency and to develop a personalized service plan. Second, participants are assigned to a two-person case management team (a case manager and a case aide) who will implement the customized service plan. Caseloads will be very low (16 clients/case management team), and service coordination will be comprehensive. Third, temporary financial assistance will be made available on a case-by-case basis to address potential obstacles to self-sufficiency.

This study will evaluate the impact of this intervention on key outcomes including family income, poverty, savings, and use of social programs. Participants are selected at random via a lottery from clients who contact Catholic Charities Fort Worth seeking assistance through three of their largest programs: financial assistance, immigration services, and a family support program. The study will include 350 participants, 150 in the treatment group and 200 in the control group. The outcomes will be tracked through a baseline survey and annual follow-up surveys for up to four years.

Intervention Start Date: 2015-03-16

Intervention End Date: 2018-07-31

### **Experimental Design**

*This section comes from a grant proposal to the Smith Richardson Foundation submitted in October 2014.*

We will employ a randomized controlled trial (RCT) evaluation to measure the impact of this new, intensive, wrap-around intervention on short and long-term life outcomes for people living in poverty. Figure 1 summarizes the process by which participants are enrolled in the study. Participants for the study will be recruited from the pool of clients that contact CCFW for assistance through two programs: Financial Assistance and Immigration Services. At the time the client initially contacts CCFW, program

staff collects basic information that will be used to screen for initial eligibility. These initial eligibility criteria are:

- Individual is between 18 and 55 years of age
- Total family income is below an income threshold (roughly 180 percent of the poverty line)
- Individual resides in Tarrant County, TX
- Individual has not received services from CCFW in the last 30 days other than Central Intake

If a client meets these initial eligibility criteria, the intake personnel will flag them as potential study participants and schedule them for an intake interview, which typically occurs either the same day or within a few days. The intake interview is designed to determine whether the client is eligible for standard services (i.e. eligible for financial assistance or immigration services), but for the purposes of the study, we will also use the intake interview to determine eligibility for the Padua Pilot. To be eligible for the study, the client must satisfy the initial eligibility criteria listed above, and the client's family must have at least one adult family member who can work. Clients deemed eligible for the study are then introduced to the intervention by a CCFW program manager and invited to complete a baseline survey.

Clients who agree to complete a baseline survey are then brought to a designated, private office where they are connected via phone with an interviewer from the University of Wisconsin Survey Center (UWSC). Clients are first asked to consent and then administered the survey. Clients who are unable to complete the baseline survey on the same day will be allowed up to 3 days to return and complete the survey. UWSC has extensive experience conducting survey interviews such as these over the phone.

At the end of each week, CCFW will send to LEO a list of id numbers for clients who have completed a survey during the week. LEO will then randomly assign the ID numbers on this list to either the treatment group or the control group (with slightly higher probability of being assigned to the control group). LEO will send the results of the randomization process to CCFW, who will then match the identifiers back to each client, and contact them regarding their selection into the program. The initial round of this enrollment process will continue until 96 clients are enrolled into the treatment group, reflecting capacity for the staff of case managers assigned to the program. However, because some clients will complete or drop out of the program, enrollment will be ongoing. We are anticipating enrolling about 150 clients into the treatment group and about 200 into the control group over the course of the first year.

Participants invited to the treatment group will be asked to schedule an initial assessment meeting with a Padua case manager. Based on the results of this detailed assessment, case managers will work with participants to design and implement a service plan to lift participants out of poverty. Control group participants will have access to the standard CCFW services. To be clear, this means the experiment will be measuring the impact of the *Padua Pilot* intervention relative to standard services; those in the control group have access to the kinds of services available at a typical service provider: some short-term benefits, a limited amount of coordinated care, and temporary, more limited financial assistance.

## **Data Sources**

*This section comes from a grant proposal to the Smith Richardson Foundation submitted in October 2014.*

The proposed project will draw from several data sources including survey data, caseworker-client observations, and interviews with caseworkers, staff, and treatment and control group participants. The survey will be administered at baseline, and at one, two and three years after initial enrollment to both the treatment and control group participants. We will also observe caseworker-client interactions and interview a subset of the organizational staff, caseworkers (n=8), case aides (n=8), and participants

(n=60). Incorporating diverse methods and following participants and staff over time will ensure fidelity of treatment, facilitate a thorough evaluation of the intervention, and allow us to speak to the impact of organizational, worker, and family-level factors in shaping socioeconomic outcomes.

The primary source of information on outcomes for study participants will come from the survey. LEO developed the survey in collaboration with the University of Wisconsin Survey Center (UWSC), a nationally-recognized designer of customized web, telephone, and in-person research instruments. Questions applicable to the low-income, work-eligible population involved in the *Padua Pilot* were customized from established national surveys like the Current Population Survey, the Panel Study of Income Dynamics, the Detroit Area Household Financial Services survey, the Women's Employment Study, and the Behavioral Risk Factor Surveillance System. The instrument is partitioned into Demographic, Financial Status/Wealth, Employment, Expenditure, Income, Physical Health, Emotional Health, and Social Systems/Relationships sections. At baseline, professional Research Interviewers from the Wisconsin Survey Center will administer a Computer-Assisted Personal Interviewing (CAPI) version of the survey over telephone to CCFW clients identified as potentially-eligible for the program. The follow-up surveys will be in-person interviews conducted by UWSC.

## Hypotheses

*These hypotheses were stated in a grant proposal to the National Institutes of Health that was submitted on October 5, 2015 after the start of enrollment, but prior to the collection of any followup surveys.*

The *central hypothesis* we will test is whether the Padua Program produces better outcomes than the existing programs in terms of a set of self-sufficiency and economic stability indicators. The *rationale* for the proposed research is there is a lot of attention and interest from policymakers and providers for this comprehensive case management approach but such a model has not been tested. We will pursue three *specific aims*:

1. **Determine the short-term impact of providing comprehensive case management on the well-being of disadvantaged individuals.** We will directly test our central hypothesis by comparing across the treatment and control groups outcomes such as employment, earnings, debt, savings, use of government programs, and indicators of physical and emotional well-being. These outcomes will be measured through a follow-up survey that will be administered 12-months after enrollment into the study.
2. **Determine the mid-range effects and cost-benefit of the Padua Program.** We will conduct follow up surveys at 24 and 36 months to determine whether this program can have a *sustained impact* on poverty. We will also examine whether any decreased use of government programs or increased earnings is large enough to justify the greater expense associated with this comprehensive intervention.
3. **Examine potential mechanisms using qualitative analysis.** Through observations of caseworker-client interactions and in-depth interviews, we will verify fidelity of implementation and explore what features of the intervention appear to be most important in helping the disadvantaged move towards self-sufficiency.

## Estimation Methodology

*This section comes from a grant proposal to the National Institutes of Health submitted October 5,*

*2015 after the start of enrollment, but prior to the collection of any followup surveys.*

The evaluation will measure the impact of the intervention by comparing means of key outcomes for the treatment and control groups. Because we are utilizing random assignment, tests of equality of means across groups can be achieved through an analysis of covariance. Given random assignment we anticipate balance in covariates so multivariate regression models should not reduce bias, but instead reduce residual variance and hence improve power. The key short-term outcomes include family income, employment, reliance on government programs, self-reported health, and measures of self-efficacy. Study participants will be interviewed through a follow-up survey at 12 and 24 months after enrollment, and the impact of the program on these outcomes will be analyzed after each of these follow-up surveys. Beyond the term of this current grant request, we plan to secure funding to extend follow-up surveying and data collection through three years post enrollment.

### **Power Analysis**

*This section comes from a grant proposal to the National Institutes of Health submitted October 5, 2015. This grant proposal, submitted after the first year of enrollment but before any surveys were collected, included an updated sample size relative to earlier grants.*

Official program enrollment began in March 2015. As of September 2015, 206 clients have been randomized; 92 have been randomized into treatment and 114 into the control group. By the end of 2016, we anticipate that 470 clients will have been enrolled in the study with 210 assigned to treatment and 260 assigned to control. Based on attrition estimates from UWSC, we anticipate just over 15% attrition from the study when UWSC administers the follow-up survey (about 12% for the treatment group and 19% for the control group), so the final sample for the one-year follow-up analysis is estimated to be 395; 185 in the treatment group and 210 in the control group.

With 185 observations in the treatment sample, we have reasonable power to detect changes in outcomes. To construct these power calculations, we generated information on socioeconomic characteristics from the latest five-year sample in the American Communities Survey for families living in Tarrant County, Texas whose family income was under two times that of the Federal Poverty Line, which is roughly the incomes of people expected to be served by the intervention. In this sample, the mean (standard deviation) of family income is \$21,700 (\$13,470) and in this group, 41.7% have incomes below the Federal Poverty Line.

In this evaluation, our ability to detect statistically significant differences is enhanced because we have baseline data. Let  $y_{ipk}$  be the outcomes for person  $i$  in time period  $p$  (1 and 2 for pre and post treatment) and in group  $k$  ( $t$ =treatment or  $c$ =control). A standard evaluation of an RCT without baseline data could compare  $y_{2t}$  versus  $y_{2c}$ . In this case, however, our key outcomes will change over time, or  $\Delta y_{ik} = y_{i2k} - y_{i1k}$  and the key comparison would be between  $\overline{\Delta y}_t$  versus  $\overline{\Delta y}_c$ . Because economic outcomes are positively correlated over time  $\text{Var}(\Delta y_t) < \text{Var}(\Delta y_c)$  and power is enhanced.

A primary outcome of interest for the study will be family income. If one assumes that average family income increases by \$2000 in the control group (\$21,700 to \$23,700) and the correlation coefficient in outcomes over time is 0.6. In this case, with 185 observations in the treatment group, we should be able to detect a differential increase in income in the treatment group of \$2,050, an increase from \$21,700 to \$23,750 (in all power calculations, we assume a power of 80% and a two-sided test with  $\alpha$  of 0.05). For subgroups, the minimum detectable effect will be larger. For example, to detect an effect for a subgroup that is half the size of the sample, we would need a differential increase in income in the treatment group of \$3,300. As mentioned above, the size of our analysis sample is estimated assuming an overall attrition rate of just over 15%, which is a conservative estimate based on UWSC's experience administering CAPI

surveys to similar populations. Even if the attrition rate on the follow-up survey were much higher, say 25%, the minimum detectable effect would only increase to \$2,425 for the full sample.

Note that the experiment can still be viewed as informative even if one is concerned that it might be difficult to generate a \$2,050 differential increase in income in one year (or \$3,300 for a subgroup). This is an expensive intervention given the low client to staff ratio and the services that will be provided. If the experiment cannot generate large increases in income, it will never pass a cost/benefit test and hence we would still learn a lot about the feasibility of the intervention.

## Updated Analyses

*On April 2, 2017, the research team submitted a grant report to the Smith Richardson Foundation. This report highlighted preliminary 12-month results for individuals who applied to Padua between March 2015 and October 2015 (roughly half the sample). This interim report was the first document to include more detailed information on analyses.*

The results below are organized roughly according to the stated goals of the Padua program: to help families achieve (1) a living wage appropriate for their family size; (2) a reduction in debt and three months' worth of savings; and (3) freedom from dependency on government programs.

For each outcome, in the first column we report the 12-month follow-up mean for clients assigned to the control group. In the second column we report the regression-adjusted ITT estimate, which is the estimated impact of assignment to treatment on that outcome.<sup>1</sup> Underneath each estimate, we report in parentheses the p-value on the test of the hypothesis that the coefficient is zero. The p-value represents the probability one would have drawn a coefficient that large at random in the case where there is actually no difference between the means. The lower the p-value, the more confident we can be that the difference in means between the treatment and control groups is not driven by chance and hence the result is considered statistically significant. A p-value below 0.10 is significant at the ten percent level; a p-value below 0.05 is significant at the five percent level. The numbers enclosed in brackets report the difference between the treatment and control group means in percentage terms (which is just the difference in column 2 divided by the control group mean in column 1).

*The following outcomes and how they were constructed were detailed in the interim report.*

### Employment Outcomes

- a) Whether the Respondent was employed (either full-time or part time) at the time of the interview;
- b) The hourly wage for Respondents on their main job (where the hourly wage is \$0 for non-working Respondents);
- c) Total earned income by the Respondent from all jobs in the month prior to the interview;
- d) The number of hours worked per week by Respondents on their main job;
- e) Whether the Respondent is working full-time, defined as 35 or more hours per week;
- f) Whether the Respondent is working part-time, defined as less than 35 hours per week;
- g) The monthly earnings for the Respondent's household (including earnings by the Respondent as well as any other household member);
- h) The per capita monthly earnings for the Respondent's household.

### Spending Outcomes

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<sup>1</sup> The footnotes of the tables in the interim report provide the regression specification. "The difference reported here is from a regression that accounts for differences at baseline between the treatment and control groups in demographic characteristics, as well as the outcome. The demographic characteristics in these regressions include month of interview, length of time between interviews, age, marital status, education, and race."

- a) Amount spent by the household on utilities (including gas, electric, water, etc.) in the month prior to the interview;
- b) Amount spent by the household on food in the month prior to the interview;
- c) Amount paid by the household for phone, internet and cable services in the month prior to the interview;
- d) Amount spent by the household to support others outside the household in the month prior to the interview (such as family in another household);
- e) Amount spent by the household on childcare in the month prior to the interview;
- f) Amount spent by the household on fuel (e.g. gas for cars) in the month prior to the interview;
- g) Amount spent by the household on rent in the month prior to the interview;
- h) Whether the household uses a budget to determine spending;
- i) Household's total spending in the month prior to the interview, including rent;
- j) Household's total spending in the month prior to the interview, excluding rent.

#### Debt and Savings Outcomes

- a) Whether the household has a checking, savings or money market account;
- b) Whether the household has a retirement account;
- c) Whether the household owns stocks or bonds;
- d) Whether the household holds credit card debt;
- e) Total amount of credit card debt currently held by the household;
- f) Whether the household carries debt (excluding mortgage debt);
- g) Total amount of debt currently held by the household (excluding mortgage debt);
- h) Whether anyone in the household has taken out a payday loan in the past year;
- i) Whether anyone in the household has rolled over a payday loan in the past year;
- j) Whether anyone in the household has taken out more than one payday loan in the past year.

#### Use of Supportive Services Outcomes

- a) Whether the household lives in public housing (i.e. apartments or homes owned by a public housing authority);
- b) Whether the household currently receives any public benefits provided by the government;
- c) Whether the household currently receives assistance through the SNAP program;
- d) Whether the household currently receives assistance through the TANF program;
- e) Whether the household currently receives assistance from the SDA program;
- f) Whether the household currently receives assistance from the SSI program;
- g) Whether the household currently receives assistance from the Unemployment Insurance program;
- h) Whether the household is currently enrolled in the WIC program;
- i) Whether the household received financial assistance from family members not currently in the household in the month prior to the interview.

*Finally, the interim report did include the following:*

The follow-up survey also collected information on clients' health, neighborhood conditions and relationships. We did not detect a discernable pattern of results for these outcomes in the preliminary data analysis, and subsequently have not included these outcomes in this interim report.

#### **References**

AEA Registry—May 26, 2015

Smith Richardson Grant Proposal—October 2014

National Institutes of Health Grant Proposal—October 5, 2014

