# VCPA Supplemental Analysis - Skin and Bones Draft

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## VCPA Rehabilitation Program

VCPA launched on October 23, 2017 by Interface Children & Family Services (ICFS or "Interface") and Social Finance (SFI). ICFS is a trusted nonprofit social services agency, serving Ventura County's children and families since 1973 with an annual budget of $7.5 million. Social Finance US is a 501(c)(3) nonprofit organization dedicated to mobilizing capital to drive social progress and is a sister company to Social Finance UK which has served successful programs since 2010. Social Finance applied for and was awarded a supplemental funding grant from the Nonprofit Finance Fund via the California Pay for Success Initiative. The award is aimed at advancing the PFS field in California by providing funding for additional needs for recidivism projects. In the case of VCPA, the grant is intended to go toward several activities, including: additional feasibility work conducted by Social Finance for the County, support for travel expenses, and additional data analysis to be performed by UCLA. There is limited government funding for community based reentry support for this project's target population: medium- and high-risk individuals on formal probation.

VCPA will consist of Interface randomizing 800 probationers into a PFS group and probation as usual group where probationers in the PFS group are provided a suite of personalized reentry support services for 3 years. The support services include moral reconation therapy, trauma therapy, relationship skills building, and employment support and placement. Each of the 800 probationers are followed for at most 12 quarters. Any subsequent arrests post-release are recorded. This will lead to a measured outcome of the total number of "clean quarters" described below where there are no arrests within a 90-day period as well as the overall re-arrest rate per group. The randomized control trial is not explicitly designed to inform which of Interface's services and interim outcomes achieved were correlated to decreased recidivism. It simply gives a count of two groups and their rearrest rate. To gain further insight into these additional interim outcomes and questions, Interface and Social Finance worked together to develop and implement a case manager and client self-report questionnaire survey, to be filled out every 3 months post-enrollment into Interface's services. These surveys were distributed via SurveyMonkey. The goal of the additional survey is to provide deeper understanding of interim outcomes pertaining to clients' progress as they receive services and identify some of the underlying causes behind the achievement (or lack thereof) of the Project's final recidivism outcomes. It will serve as a guidepost for future design of recidivism/reentry projects in communities across the country.

The VCPA Rehabiliation Program has been running since 10-23-2017. It's main purpose is to rehabilitate recently incarcerated individuals, and provide them a case manager, or a person to help guide them into a healthy way of living. The case manager and the parolees meet individually, discuss options such as cognitive behavioral therapy and substance abuse, and VCPA maintains rearrest information on these parolees. UCLA was hired to run a clean quarter analysis

The document is set up as follows:

- thoroughly cover the collection and randomization schema

- describe the demographics of each group

- describe different aspects of arrest rates

- describe arrest statistics by race, gender, and ORAS risk level

- analyze social and psychological measures between those rearrested and those not rearrested

## Data Collection

We analyze individuals for 6 observational periods of 90 days. We call these 90 day subsets quarters, and label them quarter 1, quarter 2, and so forth. Cohort 1 collection ends at 6/1/2019, and our observation for them continues through 10/1/19. The cohort 1 enrollment took in 465 parolees, randomizing 232 into the Pay for Success program. When we say "between groups", which we will refer to often, we mean between individuals in the Pay for Success program and those in the Control group. Due to NCC processes, 23 people were removed and 209 were analyzed from start to finish. The other 23 individuals were analyzed for ___ of the ___ potential quarters before being removed.

## Demographics

The demographic variables were supposed to match up between the groups. If they did not, we would have to implement some proportion matching to equate the populations. Table 1 below shows no significant differences between the demographics of Pay for Success Group and the Control group.

```
##              variable          pfs       other    pval
## 1                  n          209         233       -
## 2    Age, Mean (SD) 33.9 (10.6) 32.6 (9.7) 0.1872
## 3         Female/Male       41/168      47/186 0.9789
## 4                Race                          0.3729
## 5               White           76          67       -
## 6            Hispanic          117         145       -
## 7               Black           11          13       -
## 8               Other            5           8       -
## 9   ORAS Risk Level                          0.4536
## 10                Low           32          28       -
## 11      Low/Moderate           13          15       -
## 12          Moderate          107         117       -
## 13              High           53          61       -
## 14         Very High            4          10       -
```

The age of parolees enrolled ranged from 20 to 73. Predominantly male and predominantly hispanic. The ORAS score follows a moderately normal distribution and again is not significantly different between groups.

## Criminal Justice History

Here is both a table and an accompanying graph of the arrests by population enrollment in both cohorts.

```
##   clean potential group num.arrests people  m  f
## 1    28        32   pfs           9      6  3  6
## 2    47        59   pfs          26     18 21  5
## 3    64        79   pfs          27     21 22  5
## 4    94       115   pfs          20     19 11  8
## 5   129       146   pfs          26     23 12 14
## 6   149       165   pfs          21     18 14  7
## 7   138       156   pfs          29     23 21  8
## 8   103       119   pfs          31     24 24  7
## 9    82        92   pfs          33     25 24  9
```

```
##   clean potential group num.arrests people  m  f
```

```
## 1     18         24 other        15     11 11  4
## 2     40         52 other        22     16 21  1
## 3     75         94 other        24     21 19  5
## 4    103        118 other        30     18 18 12
## 5    144        172 other        32     30 23  9
## 6    184        211 other        35     28 20 15
## 7    184        210 other        42     29 29 13
## 8    158        178 other        28     26 22  5
## 9    129        144 other        41     33 25 15


##
##  Pearson's Chi-squared test
##
## data:  final$m and final2$m
## X-squared = 54, df = 48, p-value = 0.2559


##
##  Pearson's Chi-squared test
##
## data:  final$f and final2$f
## X-squared = 33.75, df = 30, p-value = 0.2909
```
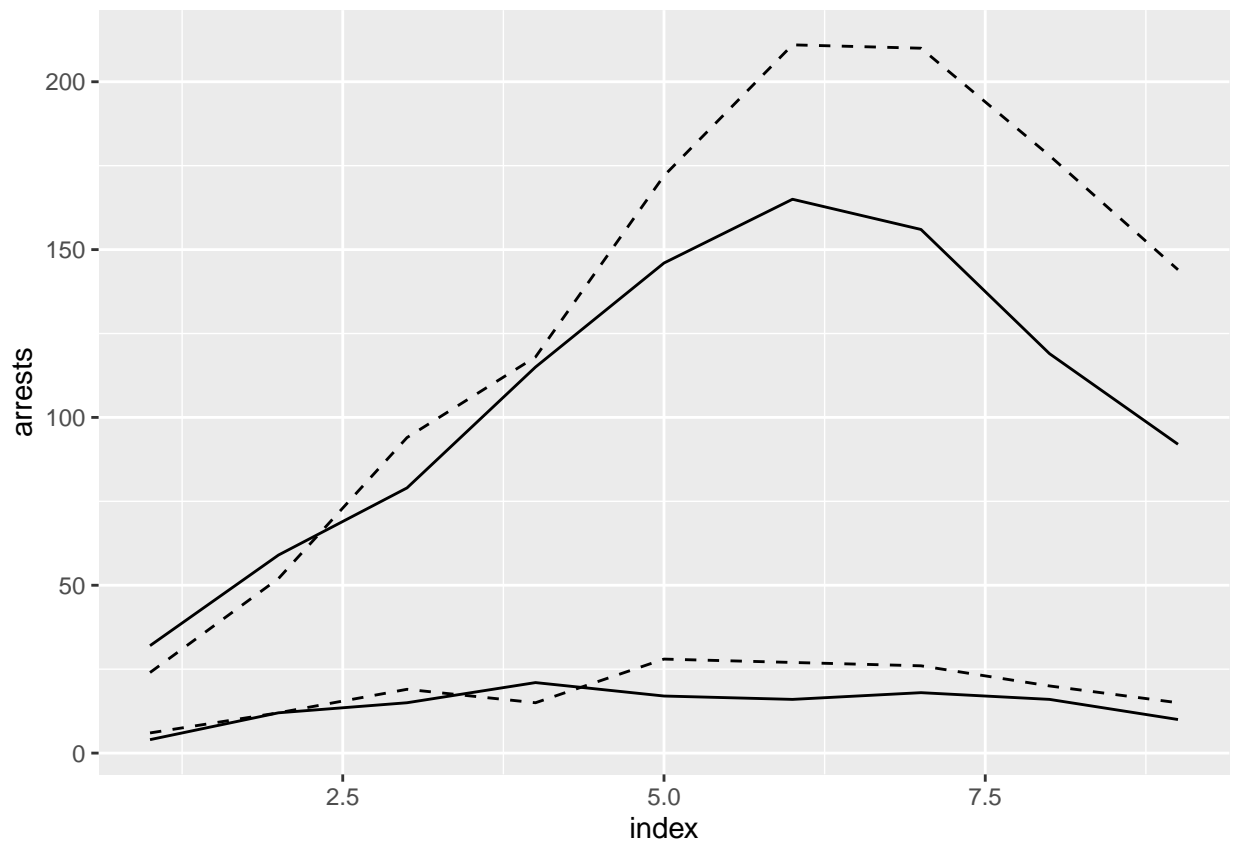
## Stratification Analysis - Gender, Race, and ORAS Risk Level

**Broken down by gender**

```
##   gender pfs other   pval
## 1 Female  17    23 0.8831
## 2   Male  82    99      -
```

**Broken down by race**

Ventura county is predominantly a hispanic community.

```
##       race pfs other   pval
## 1 Hispanic  55    77 0.1525
## 2    White  38    31      -
## 3    Black   4    10      -
## 4    Other   2     4      -
```

**Broken down by ORAS Risk Level**

We further analyze the arrest rates between groups by looking at the stratification of arrests by ORAS risk score. We see both the unique number of individuals being rearrested and the total number of arrests between groups is not signficiantly different.

```
##     risk.level pfs other   pval
## 1          Low   7     8 0.6926
## 2 Low/Moderate   5     7      -
## 3     Moderate  51    54      -
## 4         High  33    45      -
## 5    Very High   3     8      -
```

## Services Received

The question is, out of those who were randomized to be in our RCT, were there differences between those arrested and those not arrested? People were offered difference certives or cognitive behavioral therapy. These included case management, MRT, triple P, seek safety, job readiness, and other CBT.

```
##
##   0   1
##  45 330
```

## Differences within service members between those arrested and not

```
##
##  Pearson's Chi-squared test
##
## data:  rbind(services2$never, services2$ever)
## X-squared = 0.19659, df = 22, p-value = 1
```

```
##                    services       never        ever
## 1           Case Management 1.00000000 1.00000000
## 2                       MRT 0.56880734 0.41414141
## 3                   Triple P 0.05504587 0.03030303
## 4                Seek Safety 0.01834862 0.06060606
## 5              Job Readiness 0.04587156 0.01010101
## 6                  Other CBT 0.42201835 0.28282828
## 7                  SSMIncome 3.13793103 2.18518519
## 8              SSMEmployment 3.66666667 3.11111111
## 9                SSMHousing 4.54385965 4.00000000
## 10                   SSMFood 4.63157895 4.11111111
## 11               SSMChild_Ed 2.12280702 1.88888889
## 12               SSMAdult_ed 4.03508772 3.74074074
## 13                  SSMLegal 3.36842105 2.88888889
## 14             SSMHealthCare 4.94736842 4.51851852
## 15             SSMLifeSkills 2.73684211 2.22222222
## 16           SSMMentalHealth 3.50877193 3.11111111
## 17         SSMSubstanceAbuse 4.91228070 4.48148148
## 18          SSMFamilyFriends 3.64912281 3.14814815
## 19               SSMMobility 4.42105263 3.77777778
## 20              SSMCommunity 4.57894737 4.11111111
## 21                 SSMSafety 5.05263158 4.48148148
## 22         SSMPhysicalHealth 3.94736842 3.81481481
## 23 SSMParentChildRelations 2.78947368 2.37037037
```

We see that of those not arrested, those individuals are using more of the services. It appears that services lessens the possibility of receiving services. Further, in the SSM calculation, each category had a higher mean

## Summary

## Cohort 2 Preview

## Statistical Tests

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## P-value explanation

p-value is subjective, at experimental levels it is set at .05. This means long-term we expect these samples to occur this way 5% of the time. We deem a 5% chance for it to happen to be a statistical irregularity. For some particle physics experiments the burden of proof is set at 0.0000001, i.e. one in 100,000,000 times. A key point of p-values which is often glossed over is the event of multiple testing. The idea from multiple testing can be pictured as searching through 100 different rooms for evidence. Odds are by chance you will find a room that is significant, but does that mean that

## COVID Analysis

With the genuity of the COVID-19 pandemic, we saw dramatic reductions of in-person hearings. Some hearings were moved to online. In fact, police officers were told to arrest less on the minor offenses. We used a date of March 21, 2020 as the cut-off between COVID-19 policy enaction. This as of the date of

the publication, only affected two months of Cohort 1 and up to 6 total for them. As of today, the policies remain the same in Ventura county. Quarantine has not been lifted. We tested to see if the arrest rates for both groups remained similar or experienced a similar drop-off after the cutoff.