CALIFORNIA HEALTHCARE FOUNDATION

Using Medi-Cal Data to Improve Care for People with Serious Mental Illness

January 12, 2016
2:00 – 3:30 pm

A “Free the Data” webinar co-sponsored by CHCF and the California Department of Health Care Services

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Agenda

2:00-2:10	Objectives and Overview	Linette Scott
2:10-2:25	Enrollee Characteristics and Needs *Chronic Disease Morbidity Among Medi-Cal Beneficiaries with SMI and Co-occurring Substance Use Disorders*	Tim Bruckner
2:25-2:40	Barriers to Care *Diabetes Screening Among People with SMI in California*	Christina Mangurian
2:40-2:55	Program Evaluation *Variations in the Implementation of Full Service Partnerships for People with SMI in California*	Todd Gilmer
2:55-3:05	Reaction	Karen Baylor
3:05-3:30	Q&A	Chris Perrone

Presenters/ Reactors

Tim Bruckner, PhD, Associate Professor,
University of California, Irvine

Christina Mangurian, MD,
Associate Professor of Clinical Psychiatry,
University of California, San Francisco

Todd Gilmer, PhD, Professor of Health Economics,
University of California, San Diego

Karen Baylor, PhD, LMFT, Deputy Director,
Mental Health and Substance Use Disorder
Services, DHCS

Housekeeping

- Attendees are in “listen only” mode. Please do not put your phone on hold during the webinar.
- This session will be recorded
- Slides and recording will be posted on CHCF website within a week - www.chcf.org
- To ask a question: Use CHAT to Organizer
- We value your feedback. Please take a moment at the end of the webinar to complete a short survey.

Chronic Disease Morbidity among Medi-Cal Beneficiaries with Serious Mental Illness and Co-occurring Substance Use Disorders

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Background

- Mental and physical health are inextricably linked
- Persons with serious mental illness (SMI) have increased rates of physical illness and reduced life expectancy
- Higher rates of morbidity and lower effective utilization of primary health care may lead to higher rates of hospital admission for non-psychiatric conditions

Research: CVD and Diabetes

- Cardiovascular disease (CVD) and diabetes represent a large fraction of non-psychiatric hospital morbidity and costs among SMI persons
- SMI may increase the incidence and disease severity of CVD and diabetes
- One potential pathway: substance use

SMI and Substance Use Disorders

- SMI often co-occurs with alcohol and illicit substance use
- An estimated thirty to fifty percent of SMI persons report at least one substance use disorder
- This disorder may
  - reduce adherence to medications to treat chronic disease
  - exacerbate preexisting conditions
  - act as a barrier to seeking preventive care

Research Aim

- Test whether persons with SMI and a co-occurring substance use disorder will:
  - exhibit an increased risk of morbidity and mortality due to diabetes and CVD

	n	% of total
Substance use disorder	29,438	24.2
Death before 2008 (any cause)	22,609	18.6
CVD death before 2008	5,328	4.4
Female	73,650	60.5
Age		
18-29 years	30,882	25.3
30-44 years	39,496	32.4
45 to 54 years	29,110	23.9
55 to 64 years	22,329	18.3
Charlson co-morbidity score at baseline		
0	73,026	60.0
1	20,333	16.7
2 through 5	21,336	17.5
6 through 10	6,573	5.4
>10	549	0.4
Race/ethnicity		
Non-Hispanic white	55,244	45.3
Non-Hispanic black	19,347	15.9
Hispanic	27,615	22.7
Asian	8,011	6.6
Other	11,600	9.5
Continuous Medi-Cal eligibility	91,501	75.1

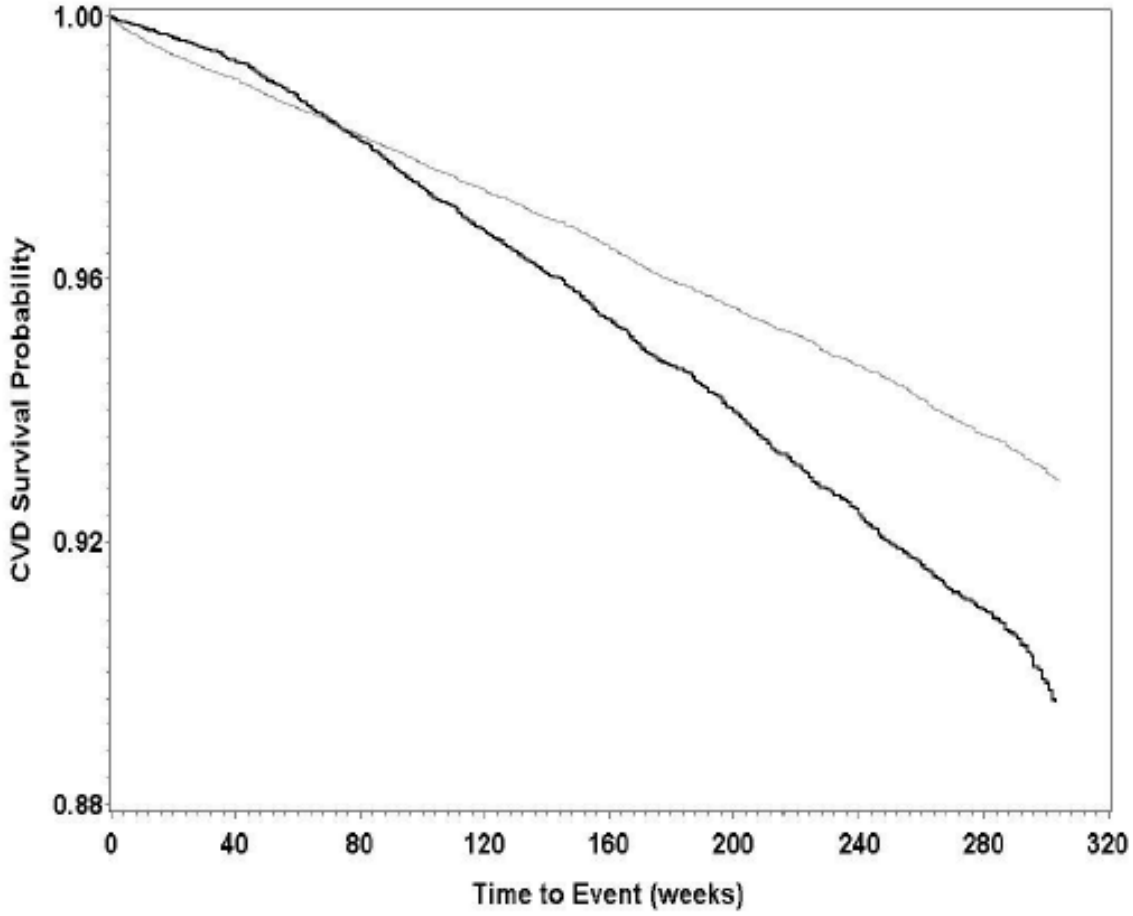


Figure 1. Crude survival plot of death due to cardiovascular disease for 121,817 persons with SMI, by co-occurring SUD status, 2002 to 2007. The black line shows persons with SMI and SUD, and the light gray line shows persons with SMI only.

Table 2. Cox proportional hazards model of **CVD death** among persons with SMI as a function of a co-occurring substance use disorder, comorbidity index at baseline, and other covariates.

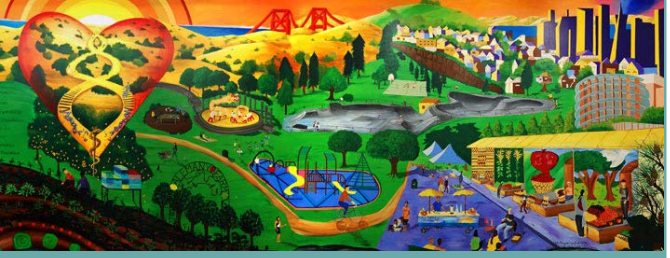
Variable	Hazard Ratio	(95% CI)
Substance use disorder	1.24	(1.17 — 1.33)
Female	0.59	(0.56 — 0.63)
Charlson co-morbidity score at baseline	1.06	(1.05 — 1.07)
Atypical Antipsychotic Use		
1st quartile (lowest, including no use)	ref.	
2nd quartile	1.07	(0.98 — 1.16)
3rd quartile	1.07	(0.98 — 1.17)
4th quartile (highest)	1.20	(1.10 — 1.30)
Race/ethnicity		
Non-Hispanic white	ref.	
Non-Hispanic black	1.27	(1.18 — 1.37)
Hispanic	0.77	(0.71 — 0.85)
Asian	0.56	(0.49 — 0.63)
Other	1.07	(0.98 — 1.18)

Implications

- Explicit management of substance use disorders may reduce overall morbidity due to these prevalent chronic diseases

- Identification of ethnic, sex, or age-specific patterns in co-occurring substance use disorders and chronic disease may assist with targeted disease management
  - The "10%"

- Care coordination may benefit from data coordination across agencies (e.g., ADP under DHCS)



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Diabetes screening among people with SMI served in the California public mental health care system

January 12, 2016

California HealthCare Foundation Webinar: Using Medi-Cal Data to Improve Care for Serious Mental Illness

Disclosures

- **NIMH K23 Career Development Grant** (2012-present)
- **UCSF Hellman Family Award for Early Career Faculty** (2013-present)
- **UCSF RAP Grant for Underrepresented Minority Faculty** (2011-2013)
- **Past support:** NARSAD; APIRE/Lilly; APIRE/Janssen

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Overview of Today's Talk

- Study Overview
- Medi-Cal Data Gathering Process
- Results
- Program Implications

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Study Overview

Background

- **In the US, there are 19 million adults living with SMI (6% of the US population).**
  - Over 2 million in California
- **People with SMI die 25-30 years earlier than the general population, often from CVD** (Olfson 2015; Colton 2006)
- **Poor adherence to guideline-recommended metabolic screening** (Morrato 2010; Essock 2009)
- **People with SMI utilize community mental health clinics significantly more often than primary care** (Druss 2008).

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Meet the patients where they are.

I want to leverage strong public-academic partnerships to improve the public health care system that people with SMI already use (community mental health)

Public Academic Partnerships

- **Implementation of health screening for 15,000 people with SMI in NYS OMH** (Mangurian 2010)
- **Moved back to California…**
- **Right place, right time, right people**
  - Penny Knapp, MD, Director of Mental Health Services, and leader of CalMEND
  - Made presentations to CalMEND county leaders
  - Developed a plan that would be mutually beneficial
    - Examine DM screening of people with SMI in California, and determine if CalMEND was effective.
    - Opportunity to examine other health care screening

Study Design and Methods

- **Retrospective cohort study**
- **Two study periods**
- **Inclusion criteria**
  - ≥18
  - Taking an antipsychotic medication (98% SGAs)
  - Treated at a CA CMHC
  - Not Medicare dual-eligible
- **Primary outcome measure**
  - Evidence of diabetes screening
- **Analysis**
  - Poisson regression with robust standard errors to account for clustering by county

Data Gathering

- **Getting patients identified as CalMEND patients as much more complicated than DMH leadership imagined since many were not Medi-Cal patients.**
- **Unable to obtain a comparison group due to confidentiality concerns.**
- **IRB approval process:** DRC/DHCS, Committee of the Protection of Human Subjects, and UCSF
- **CalMEND staff in DHCS (John Igwe) combined the CSI and Medi-Cal data and gave securely to UCSF Programmer who cleaned and coded for analysis.**

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Results

Low diabetes screening among people with SMI

- **Recent publication in JAMA Internal Medicine** (*Mangurian et al, 2015*)
- **Only 30% (15,315/50,915) of people were screened for DM, despite guidelines in place 10 years ago.**
- **The strongest correlate of diabetes screening was having at least one primary care medical care visit (36% vs 20%; PR 1.80, 95% CI 1.62-2.00)**
- **Young adults (18-27) were less likely to be screened than any other category of older adults with SMI.**

Letters

RESEARCH LETTER

Diabetes Screening Among Underserved Adults With Severe Mental Illness Who Take Antipsychotic Medications

Adults in the United States with severe mental illness (SMI), such as schizophrenia and bipolar disorder (totaling approximately 7 million), are estimated to die, on average, 25 years earlier than the general population, largely of premature cardiovascular disease.[1] The Institute of Medicine[2] has called for improvements in health care for this population. Severe mental illness is associated with elevated risk for type 2 diabetes mellitus.[3] Treatment with antipsychotic medications contributes to risk, with most evidence focused on second-generation antipsychotic medications, but similar increases in risk are reported with older and newer medications.[4] The American Diabetes Association[5] recommends annual diabetes screening for patients treated with antipsychotic medications, and public health administrators have targeted this population for improved health screening.[6] To our knowledge, no studies have examined screening rates in this highest-risk population of adults with SMI because of limitations in public health medical records. We examined diabetes screening among publicly insured adults with SMI taking antipsychotic medications using matched administrative data for physical and mental health care services in a large health care system. We measured diabetes screening prevalence among patients with SMI treated with antipsychotic medications and assessed characteristics predictive of screening.

Methods | This retrospective cohort study analyzed data from the California Medicaid (Medi-Cal) and Client and Service Information systems using the 2 study periods January 1, 2009, to December 31, 2009 (period 1), and October 1, 2010, to September 30, 2011 (period 2). Data from period 2 were used to characterize diabetes screening in the subgroup without diabetes mellitus in period 1. Following approval by the UCSF (University of California, San Francisco) Committee of Human Research, the State of California Committee for the Protection of Human Subjects, and the California Department of Health Care Services' Data and Research Committee, the latter department combined these databases, deidentified data, and created our analytic data set. The following criteria characterized the cohort: (1) age 18 years or older, (2) diagnosis of SMI by a psychiatrist, (3) prescription of an antipsychotic medication at least once during period 1 and period 2, (4) mental health care use during both study periods, (5) Medi-Cal enrollee, and (6) non–dual eligibility for Medicare (because of unavailable Medicare laboratory billing data). The primary outcome measure was evidence of diabetes screening via glucose-specific fasting serum test (*Current Procedural Terminology* [CPT] code 82947, 82948, 82950, or 82951) or glycated hemoglobin test (CPT code 83036). A secondary outcome was nonspecific screening (eg, nonfasting metabolic panel) (CPT code 80048, 80050, or 80053). Poisson regression was used to estimate the relative prevalence of diabetes screening for each predictor. We estimated associations for receiving diabetes-specific screening vs nonspecific or no screening and then contrasted any screening vs none. Using statistical software (Stata, version 13.2; StataCorp LP), robust standard errors were used to account for clustering of outcomes by county and to accommodate the use of a Poisson model for a binary outcome.

Results | Of 50 915 study participants, 15 315 (30.1%) received diabetes-specific screening (**Table 1**). Almost one-third, 15 832 (31.1%), received no form of glucose screening in a yearlong period. The strongest correlate of diabetes-specific screening was having at least 1 outpatient primary care visit during the period examined (adjusted prevalence ratio, 1.80; 95% CI, 1.62-2.00; $P < .001$) (**Table 2**).

Discussion | In this large cohort study of adults with SMI taking antipsychotic medications in the California public mental health care system, almost 70% were not screened for diabetes mellitus using validated screening measures. Individuals with SMI who had at least 1 primary care visit in addition to mental health services were more than twice as likely to be screened than those who did not. This observation supports the value of burgeoning efforts to integrate behavioral health and primary care. Growing evidence supports the value of screening for diabetes mellitus in higher-risk populations, such as those receiving treatment with antipsychotic medications, including first-generation and second-generation agents that commonly result in co-occurring obesity. Future studies should explore barriers to screening in this vulnerable population.

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Table 2. Potential Factors Associated With Annual Diabetes Screening Status[a]

Variable	Adjusted Prevalence Ratio of Diabetes-Specific Screening vs Nonspecific Diabetes Screening[b]			Adjusted Prevalence Ratio of Any Diabetes Screening vs No Diabetes Screening[c]		
	Prevalence Ratio (95% CI)	Pairwise	*P* Value	Prevalence Ratio (95% CI)	Pairwise	*P* Value
Sex[d]						
Male	1 [Reference]	NA	NA	1 [Reference]	NA	NA
Female	1.15 (1.10-1.20)	<.001	<.001	1.08 (1.06-1.09)	<.001	<.001
Race/ethnicity[d]						
Asian	1.02 (0.94-1.11)	.56	<.001	0.96 (0.91-1.02)	.20	<.001
Black	1.00 (0.92-1.09)	.99		0.92 (0.90-0.94)	<.001	
Hispanic	1.12 (1.01-1.24)	.03		1.00 (0.97-1.04)	.96	
Other	1.05 (1.00-1.09)	.04		0.98 (0.95-1.02)	.32	
White	1 [Reference]	NA	NA	1 [Reference]	NA	NA
Age, y[d,e]						
18-27	1 [Reference]	NA	NA	1 [Reference]	NA	NA
28-47	1.23 (1.17-1.30)	<.001	<.001	1.09 (1.07-1.12)	<.001	<.001
48-67	1.43 (1.31-1.55)	<.001		1.17 (1.14-1.21)	<.001	
≥68	0.93 (0.72-1.21)	.62		0.93 (0.82-1.06)	.27	
Evidence of primary care outpatient health care use[f]						
Yes	1.80 (1.62-2.00)	<.001	<.001	1.48 (1.36-1.61)	<.001	<.001
No	1 [Reference]	NA	NA	1 [Reference]	NA	NA

[a] Each adjusted model depends on the specific variable and its position, along with a directed acyclic (causal) graph. We created a directed acyclic graph to identify confounders and mediators of the predictors of interest.

[b] Diabetes-specific screening (n = 15 315) vs no diabetes-specific screening (includes nonspecific or no screening) (n = 35 600).

[c] Any diabetes screening (includes diabetes-specific screening and nonspecific diabetes screening) (n = 35 083) vs no screening (n = 15 832).

[d] Controlling for 3 main demographic variables (sex, race/ethnicity, and age) and county type (urban or rural), unless it is the predictor variable of interest.

[e] These age categories were those provided by the California Department of Health Care Services to the study investigators.

[f] Controlling for main demographic variables, county type (urban or rural), psychiatric diagnosis, comorbid substance abuse, and comorbid metabolic disorders.

Additional findings *(in manuscript form)*

- **Diabetes incidence/prevalence**
  - **Prevalence 27%** (general population 9.3%)
  - **Incidence 10.93/1,000** (general pop: 7.1/1000)
- **HIV**
  - **Only 7% are tested** (3,817/57,170) despite a 6% prevalence (0.5% in the general population
- **Hep C**
  - **Only 4.7% (2,674/57,170) are tested** (12.7% in the general population), despite a 17% prevalence (1% in the general population) (AJPH *in Press*)
- **Breast Cancer**
  - **Only 23.2% (5,352/23,087) get mammograms** (43% in general population)

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Program Implications

Implications

- **These findings should influence policy to improve the care of people with SMI**
  - Need to improve DM and other health care screening of people with SMI system-wide
  - Need to focus on young adults
    - This is an opportunity for prevention!
  - Need to bring primary care to CMHCs
    - On-site phlebotomy
    - On-site care managers (peers?)
    - Primary care consultants?

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Thank you!

Please feel free to contact me with questions
(christina.mangurian@ucsf.edu)

Variation in the Implementation of California's Full Service Partnerships for Persons with Serious Mental Illness

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Susan Ettner and Marian Katz, UCLA
Lawrence Palinkas and Ben Henwood, USC
Ana Stefancic and Sam Tsemberis, Pathways to Housing, Inc.

AHRQ R01 HS01986-1

Background / Objectives

- Permanent supported housing / Housing First
  - Subsidized housing and team-based treatment models for persons with serious mental illness who are homeless
  - Programs are being implemented throughout the U.S.
- Substantial variation in implementation
  - Approaches to housing and treatment
  - Level of client choice and involvement
- Leverage a natural policy experiment
  - Large scale implementation of supported housing in CA
  - Identify predictors of fidelity to a benchmark model
  - Identify outcomes related to fidelity to a benchmark model

Housing First

- Developed in New York City by Pathways to Housing
- Traditional housing model requires treatment adherence and sobriety before placement
- Housing first model emphasizes immediate housing in scatter site apartments with tenancy rights and client choice in treatment participation
  - Choice/affordability, scatter site housing, separation of housing and treatment, service philosophy, service array, team structure

Full Service Partnerships

- Cornerstone of the Mental Health Services Act
  - Supported housing programs for persons with SMI who are homeless or at risk for homelessness
- FSPs do 'whatever it takes' to improve residential stability and mental health outcomes
  - FSPs were implemented with substantial stakeholder input, and were adapted to local environments, resulting in a wide variation in implementation

Mixed Methods Design

- Sequential explanatory and exploratory MMD
  - qual ➔ QUAN ➔ qual
  - Focus group (N=1) was used to develop survey (N=93) which was followed by site visits (N=20)
  - Administrative data provided information on housing, service utilization, and costs (N=10,231)
  - Housing examined pre-post
  - Service use and costs analyzed using a difference in difference model with a propensity score matched control group

Housing, Service Use, Costs

- Data Collection Reporting (DCR) system
  - Data on housing and other outcomes provided at baseline, quarterly, and key events
- Client and Services Information (CSI)
  - Mental health services provided by counties
- OSHPD Discharge data
  - Inpatient and emergency room discharges
- Medi-Cal paid claims
  - Used to estimate costs

Participating Counties

Housing choice and structure	
Fewer than 30% of participants live in emergency, short-term, transitional, or time-limited housing	73%
At least 85% of participants live in scattered-site permanent supported housing	14%
Separation of housing and services	
Access to permanent housing requires only face-to-face visits with program staff and adhering to a standard lease	43%
The majority of participants in permanent housing have a lease or occupancy agreement that specifies their rights and responsibilities of tenancy and which do not include provisions regarding adherence to medication, sobriety, or a treatment plans, or adherence to program rules such as curfews or restrictions on overnight guests	36%
Service philosophy	
Participants have the right to choose, modify, or refuse services and supports at any time	63%
Participants with serious mental illness are not required to take medication and/or participate in treatment	67%
Participants with substance use disorders are not required to participate in substance use treatment	81%
Program follows a harm reduction approach to substance use	76%

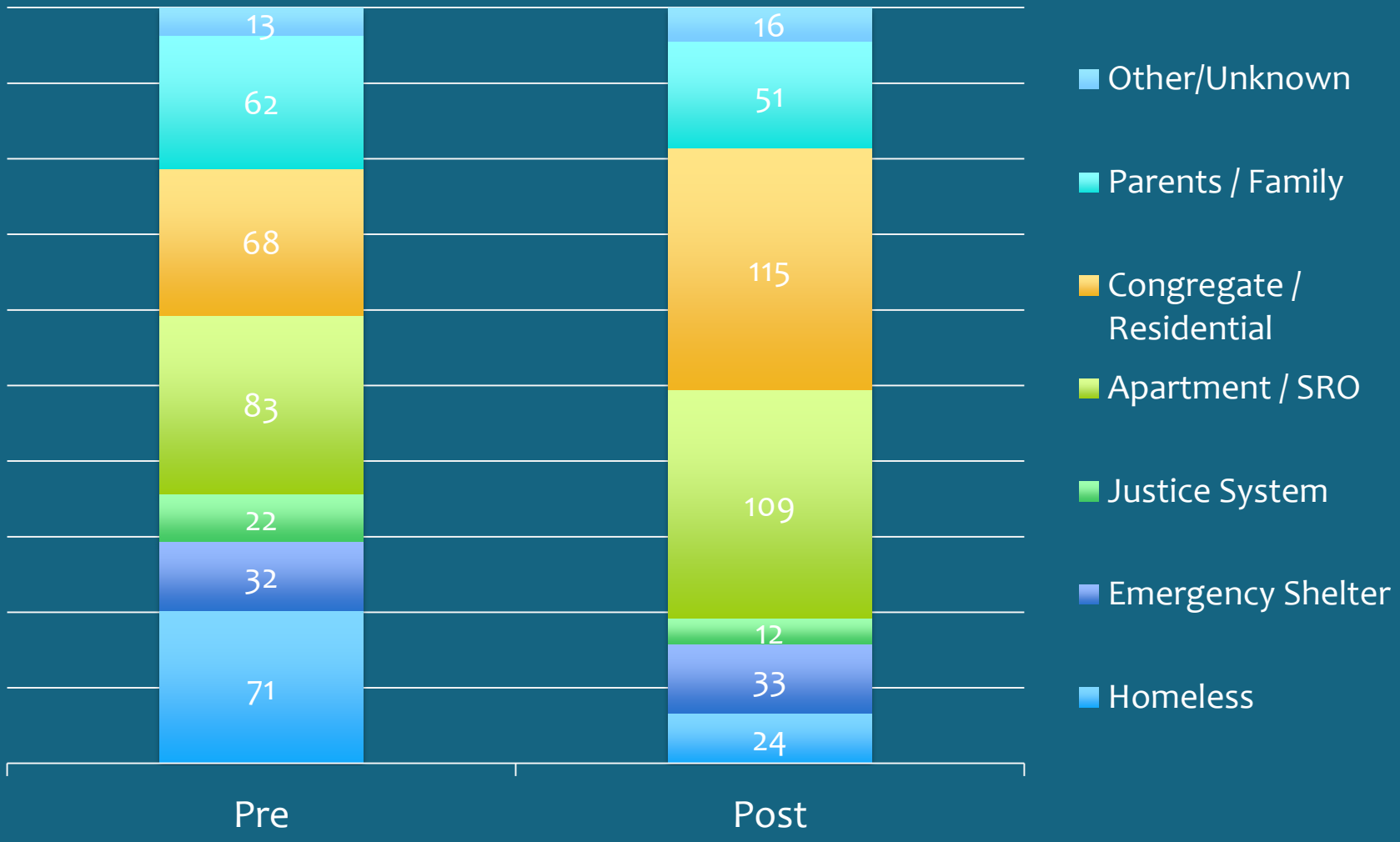
Service array	
Program provides three or more approaches to substance use intervention	69%
Program provides opportunities for community based employment	75%
Program provides opportunities for supported education in the community	88%
Program provides opportunities for community based volunteering	93%
Program provides three or more approaches to support participants with physical health issues	71%
Program provides three core social integration services	71%
Program structure	
Program staff meets at least four days a week	41%
Program meetings address four core functions	74%

Predictors of Fidelity from Site Visits

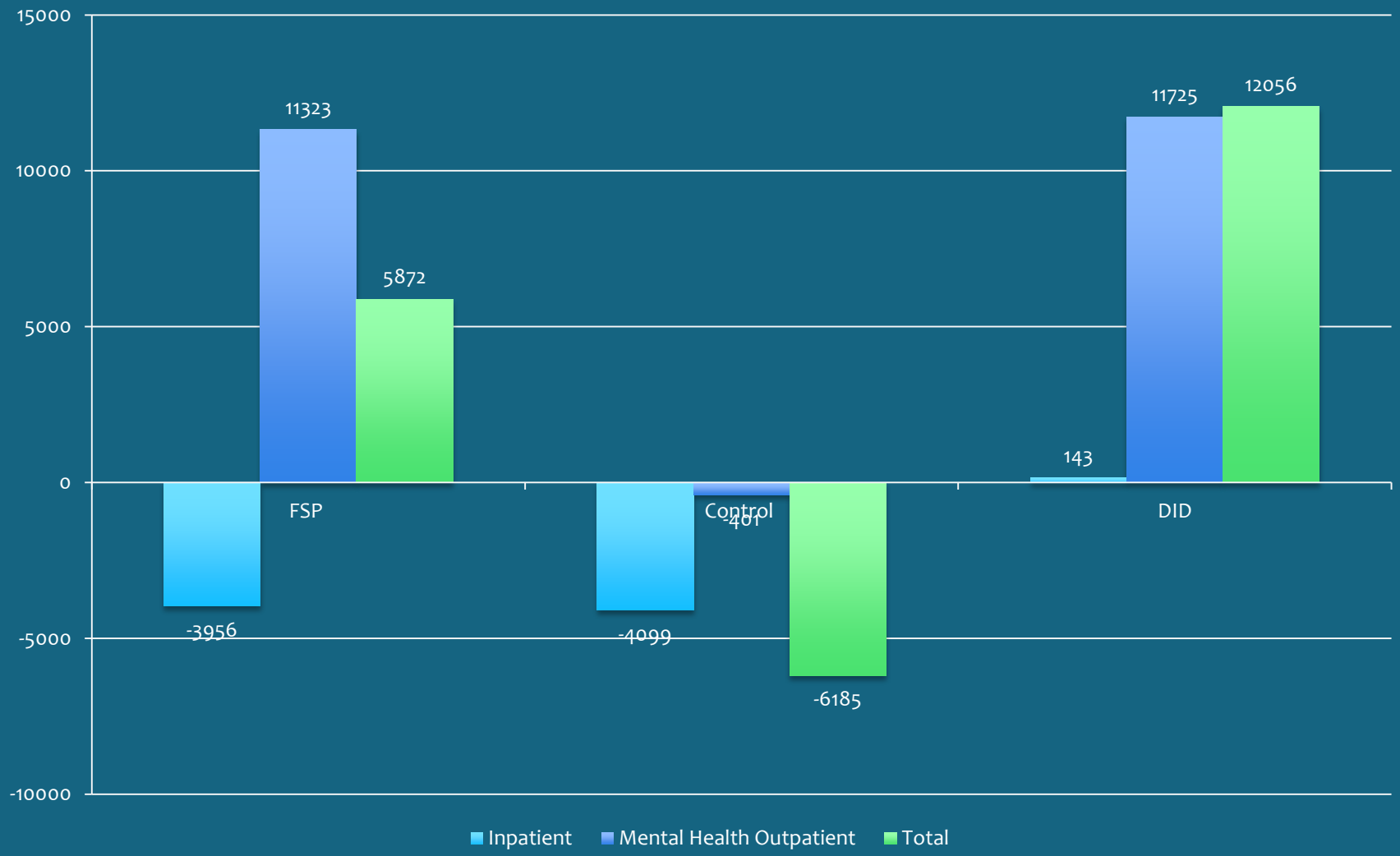
- Individuals (i.e. program director)
  - Knowledge and beliefs about the intervention (e.g. experience, values), personal attributes
- Inner setting
  - Program culture, compatibility, communication, and readiness for implementation
- Outer setting
  - Client needs and resources (i.e. target population), cosmopolitanism, external policy and incentives

Knowledge and beliefs about intervention	Value orientation to FSP goals	"As executive director...[I] try to enhance the environment so that it's consistent with recovery values."	"...it's a crisis oriented team because we're always putting out fires."
Culture	Program goals	“…people are people. We’re here to help them in their quality of life and to be what they want to be.”	"Our main goal is really to keep them from going to jail and from getting back in the hospital."
Patient needs and resources	Target population	"We do outreach, and we find people in the community that are unserved because part of our population is- you are supposed to be unserved by the mental health system. So there's no list that the county has of who those folks are because [they are] the folks that the county hasn't served."	"Here in [County Name] the greatest need has been high utilizers of hospitals and jails, so I would say at least 85 percent of our referrals are coming from those settings."

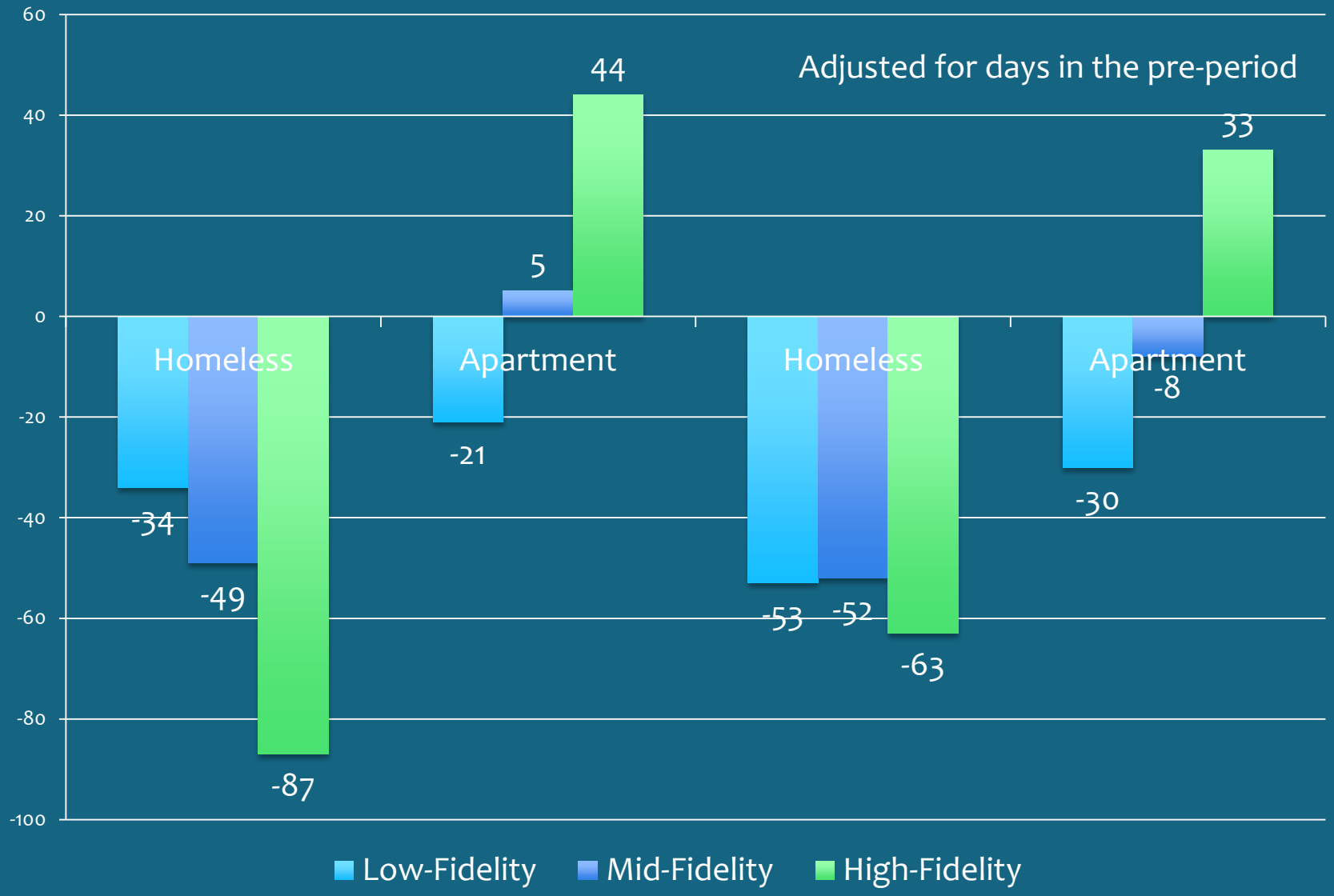
Residential Settings Pre-Post



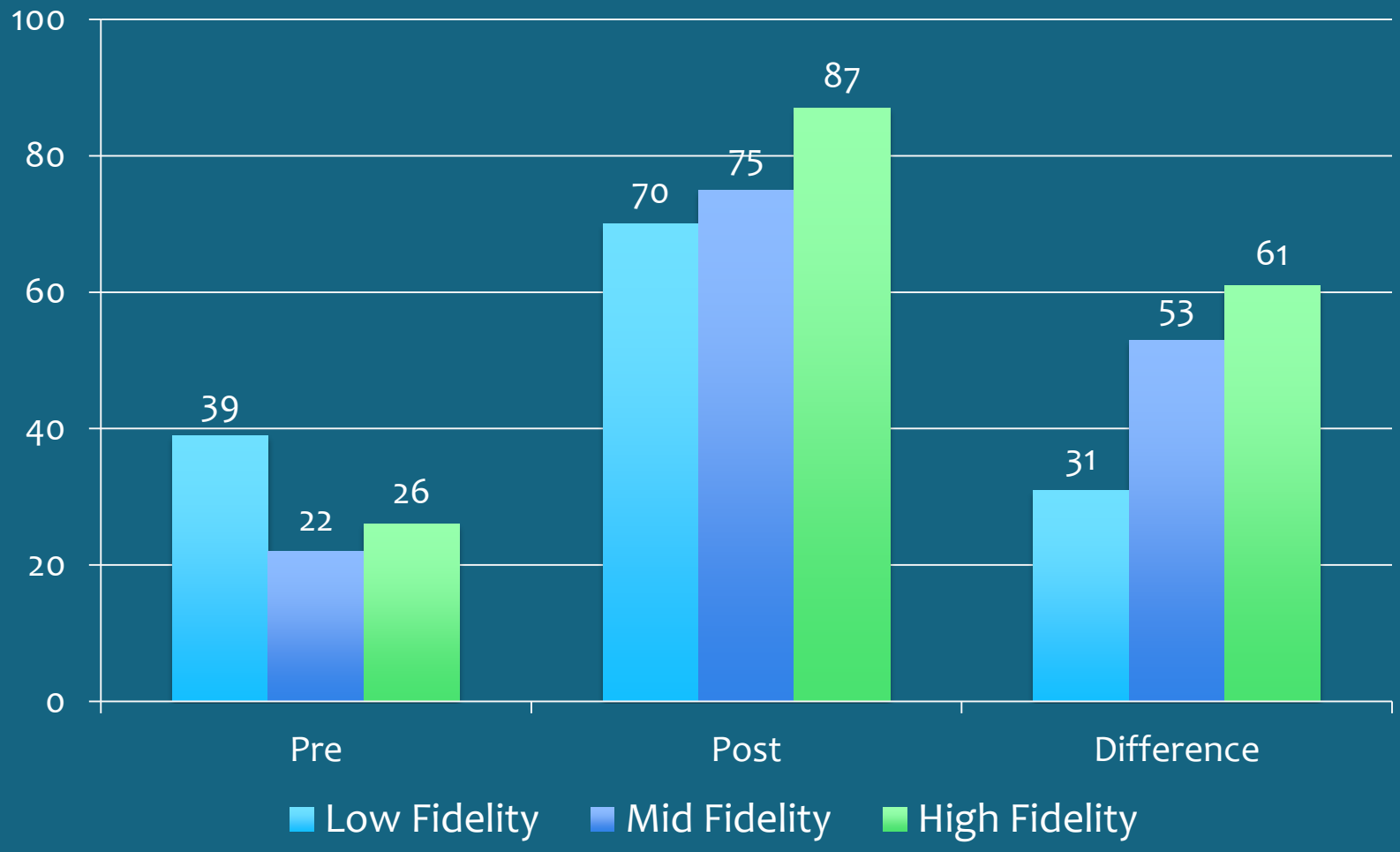
Change in Annual FSP Costs



Changes in Residential Setting by Fidelity



Changes in Outpatient Visits by Fidelity



Summary of Findings

- Substantial variation in the implementation of FSPs
- Fidelity predicted by the experience and values of the program manager, the program culture, and external influences on the target population and resources
- Higher fidelity programs enrolled clients
  - With longer histories of homelessness
  - Who were less engaged in outpatient mental health services

Implications

- Assuming higher fidelity programs are a desired outcome …
- Regulations could require longer histories of homelessness and/or less engagement in outpatient care
- Trainings could engage both leadership and program staff, and focus on both philosophy and practice

Q&A

DHCS

- Linette Scott, MD
- Neal Kohatsu, MD
- Karen Baylor, PhD, LMFT

Panelists

- Tim Bruckner, PhD
- Christina Mangurian, MD
- Todd Gilmer, PhD

CHCF and DHCS
thank you for your participation

We value your feedback.
Please complete a short survey.