QUIT: A PRIMARY CARE BASED MULTI-COMPONENT BRIEF INTERVENTION EFFICACY TRIAL TO REDUCE RISKY CANNABIS AND OTHER DRUG USE

L Gelberg, RM Andersen, G Natera, BD Leake, M Vahidi, S Shoptaw, M Rico, E Okafor, C Bone

UCLA Family Medicine, Public Health, Sociology, Semel Institute

Funder: NIDA, US State Department, US Embassy in Mexico

Presentation to: North American Cannabis Summit
Los Angeles CA January 28, 2019
Background

- **Quit Using Drugs Intervention Trial (QUIT)**
  - A randomized controlled trial of the QUIT primary care multi-component Screening and Brief Intervention protocol compared to usual care in reducing “risky” cannabis and other drug use, and preventing progression to dependence and drug-related harm among low-income, racially-diverse patient populations in community health centers

- **QUIT-Binational, replication of QUIT**

Gelberg et al. *Drug and Alcohol Dependence*. 2017
Why Focus on Cannabis and other Drug Use of Patients in Primary Care Clinics?

- Drug use is a **public health problem** that negatively affects the individual, family, and society (67M risky drug users in US).
- Drug use has **physical and psychological consequences**; it can interact with and exacerbate pre-existing conditions (e.g. hypertension, heart disease) or become the catalyst for communicable diseases (HIV, hepatitis B, hepatitis C).
- Drug use is a **chronic relapsing condition** like diabetes or hypertension. Early detection and treatment is important.
- Drug use **often goes undiagnosed**. Patients won’t report it. Clinicians may not ask about it or intervene if it’s discovered.
- Drug users commonly **do not seek treatment** for years after onset of use making screening in primary care settings a potentially important path to early detection and treatment.
Background

- Some RCTs of brief interventions for risky drug use in primary care settings in the US have yielded negative results (Saitz et al., 2014; Roy-Byrne et al., 2014)
- Some brief intervention studies have shown promise
  - Observational studies (Bashir et al., 1994; Cormack et al., 1994)
  - RCTs of brief interventions abroad (Humeniuk et al., 2012)
  - RCTs in non-primary care settings in the US (Bernstein et al., 2005; Blow et al., 2017; Mitchell et al., 2012)
Policy Implications of the QUIT Trials

- Despite increasing evidence of efficacy, no standard screening or brief intervention protocol for cannabis and other drug use in primary care clinics is commonly employed.
- This QUIT trials examined the feasibility and efficacy of implementing QUIT for patients receiving care in these clinics.
- QUIT could be an intervention that meets the Mental Health Parity and Addiction Equity Act policy mandate to integrate drug use SBIRT services into primary care.
Aims of Presentation

1. To estimate the prevalence, patterns, and correlates of cannabis use in the QUIT-Binational study

2. To assess the efficacy of the primary care clinician brief QUIT intervention for reducing risky cannabis and other drug use among low-income, racially-diverse patient populations.

3. To assess the efficacy of a pilot replication of the primary care-based QUIT intervention among Latino patients of federally qualified health centers (QUIT-Binational)
METHODS: SCREENING
Developed Reliable Computer-Driven Data Collection System

- All data were collected with our Electronic Materials Management App (“EMMA”)
- “Talking touch-screen” wireless tablet PC computers
- User friendly, multiple languages
- Used for screening, signing electronic consent, randomization, self-administered patient questionnaires, transcribing telephone counseling sessions for intervention group, following study patients, and data monitoring
EMMA System Description

- Web-based survey administration
  - Allows study designers to create multi-part surveys with complex skip-logic and computed fields

- Web-based survey system
  - Software allows multiple tablet computers to simultaneously survey patients in the field
  - Surveys are continuously sent to server to ensure data integrity
Screening

- Aimed to screen all adult patients in the clinic waiting rooms
- Patients self-administered all questionnaires on “talking touch-screen” tablet computers tailored to low-literacy populations (UCLA EMMA Program, Singleton et al., 2011)
- Patient self-administered version of the WHO ASSIST on a “talking” Tablet PC using our EMMA system (avg 4.9 min)
  - Anonymous
  - Automated scoring and user-friendly touch screen tailored to low-literacy, some visually impaired, ethnically and culturally diverse patients
Asus EEE PC – T91
Tablet PC

– 9.1” Screen
– Swivel Touch Screen
Questionnaire Overview

On the fly multi-language support

Question area

Navigational buttons

Response area

Text-to-speech functionality to accommodate vision and literacy issues

In your life, have you ever used cocaine or crack (coke, blow, snow, flake, toot, rock, etc.)?

No  Yes

Back
Drug Use Screener

- **WHO Alcohol Substance Involvement Screening Test (ASSIST)**
- Consists of seven questions that are embedded within the eligibility screening process
- **4.9 minutes** on average
- Scores into clinically meaningful categories of lifetime and past 3 months drug use
  - Low use
  - Moderate use (risky use) suggestive of need for a brief intervention
  - High use suggestive of need for evaluation for referral to specialty substance use treatment (excluded from trial, given letter to take to their doctor regarding screening results)
Definition of Past 3 Months Drug Use

- No Use/ Low Use (ASSIST 0-3)
- Moderate (Risky) Use
  - Casual, frequent, or binge use w/o the physiological or psychological manifestations of dependence (ASSIST 4-26)
- High Use
  - Risk for dependence (ASSIST 27+)
Inclusion Criteria

ASSIST Screening

- Speak English or Spanish; 18+ years old
- Had a general medical appointment for themselves that day;
- Expected to be in LA area for next 3 months; had a phone number where they can be reached
- Completed ASSIST screening, consent, baseline assessment before being seen by doctor

Trial

- ASSIST score positive for risky drug use (ASSIST 4-26)
- Used highest scoring drug (HSD) in past 30 days
Exclusion Criteria

**Screening**
- Participated in QUIT in the past (screening or trial)
- Pregnant (females)
- In drug treatment (started longer than 30d ago)

**Trial**
- ASSIST score positive for no/low drug use (0-3)
- ASSIST score positive for high levels of drug use (27+, risk for dependence, serious level of SUD)
  - Excluded if scored 27+ on the ASSIST for substances other than tobacco, alcohol, or cannabis
  - Given letter to take to their doctor re + screen
QUIT BINATIONAL: CANNABIS PREVALENCE
Aims of Presentation: QUIT-Binational: Cannabis Prevalence

- To estimate the prevalence of cannabis use and patterns of use (including risk of cannabis use disorder) in the QUIT-Binational study

- To determine factors associated with moderate-to-high risk cannabis use among U.S. and foreign-born Latino primary care patients in East Los Angeles prior to legalization of recreational cannabis use

- To understand the impact of foreign birth on Latino primary care patients use of cannabis
Design

- **Sample:** Primary care patients

- **Sites**
  - Federally Qualified Community Health Center in East Los Angeles - one of the original QUIT study sites
  - Primarily serves low-income Latino patients

- **Recruitment period:** March-July 2013
Figure 1

(1) Medical Visit for Themselves (n=4903)

(2) Excluded – Patient declined screening (n=1072)

(3) Excluded – Not eligible for the ASSIST (n=1153)
  □ Previously screened

(4) Agreed to Screening for the ASSIST (n=640)

(5) Excluded – Not eligible for the ASSIST (n=118)
  □ Under 18
  □ Previously screened

(6) Eligible for the ASSIST (n=2267)

(7) Excluded – ASSIST not completed (n=21)
  □ Unable to complete ASSIST (n=116)
  □ Unwilling to complete the ASSIST (n=74)
  □ Other (n=9)

(8) Completed the ASSIST (n=2285)

(9) Excluded (n=16) non-Latino patients

(10) Final sample (n=2066)

ASSIST 0-3 (n=1614)

ASSIST 4-6 (n=215)

ASSIST 17+ (n=37)
## Cannabis Use (n=2066)

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime Cannabis Use</td>
<td>34</td>
</tr>
<tr>
<td>Moderate-High Risk Cannabis Use (ASSIST 4+)</td>
<td>12</td>
</tr>
</tbody>
</table>
# Prevalence Estimates from Cannabis Use QUIT vs NSDUH

<table>
<thead>
<tr>
<th></th>
<th>18-25 Years (%)</th>
<th>26+ Years (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>QUIT Past 3 mo CB Use</strong></td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td><strong>NSDUH Past Year CB Use (US)</strong></td>
<td>32</td>
<td>9</td>
</tr>
<tr>
<td><strong>NSDUH Past Year CB Use (CA)</strong></td>
<td>34</td>
<td>10</td>
</tr>
<tr>
<td><strong>NSDUH Past Mo CB Use (US)</strong></td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td><strong>NSDUH Past Mo CB Use (CA)</strong></td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td><strong>QUIT CB, Moderate-severe risk, past 3 months</strong></td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td><strong>NSDUH CB dependence (US)</strong></td>
<td>5</td>
<td>0.8</td>
</tr>
</tbody>
</table>
# Patterns of Cannabis Use

## ASSIST Questions

<table>
<thead>
<tr>
<th></th>
<th>Moderate-High Risk Cannabis Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
</tr>
<tr>
<td>ASSIST Score for cannabis, mean (SD)</td>
<td>10</td>
</tr>
<tr>
<td>Q2. Frequency of cannabis Use, past 3 months</td>
<td></td>
</tr>
<tr>
<td>Once or Twice</td>
<td>44</td>
</tr>
<tr>
<td>Monthly</td>
<td>11</td>
</tr>
<tr>
<td>Weekly</td>
<td>15</td>
</tr>
<tr>
<td>Daily or Almost Daily</td>
<td>30</td>
</tr>
</tbody>
</table>
Patterns of Cannabis Use: ASSIST Questions

<table>
<thead>
<tr>
<th>Q3. Strong desire or urge to use cannabis, past 3 months</th>
<th>Moderate-to-High Risk Cannabis Users (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No strong desire</td>
<td>30</td>
</tr>
<tr>
<td>Once or Twice</td>
<td>23</td>
</tr>
<tr>
<td>Monthly</td>
<td>8</td>
</tr>
<tr>
<td>Weekly</td>
<td>15</td>
</tr>
<tr>
<td>Daily or Almost Daily</td>
<td>24</td>
</tr>
</tbody>
</table>
Patterns of Cannabis Use: ASSIST Questions

<table>
<thead>
<tr>
<th>Q.4 cannabis use led to health, social, legal or financial problems, past 3 months</th>
<th>Moderate-High Risk Cannabis Users (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No problems</td>
<td>44</td>
</tr>
<tr>
<td>Once or Twice</td>
<td>36</td>
</tr>
<tr>
<td>Monthly</td>
<td>4</td>
</tr>
<tr>
<td>Weekly</td>
<td>8</td>
</tr>
<tr>
<td>Daily or Almost Daily</td>
<td>8</td>
</tr>
</tbody>
</table>
## Patterns of Cannabis Use: ASSIST Questions

<table>
<thead>
<tr>
<th>Q5. Failed to do what was normally expected of you because of cannabis use, past 3 months</th>
<th>Moderate-High Risk Cannabis Users (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No time failed</td>
<td>52</td>
</tr>
<tr>
<td>Once or Twice</td>
<td>33</td>
</tr>
<tr>
<td>Monthly</td>
<td>6</td>
</tr>
<tr>
<td>Weekly</td>
<td>4</td>
</tr>
<tr>
<td>Daily or Almost Daily</td>
<td>5</td>
</tr>
</tbody>
</table>
Patterns of Cannabis Use: ASSIST Questions

<table>
<thead>
<tr>
<th>Q6. Friend or relative or anyone else ever expressed concern about cannabis use</th>
<th>Moderate-High Risk Cannabis Users (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, Never</td>
<td>66</td>
</tr>
<tr>
<td>Yes, but not in past 3 months</td>
<td>14</td>
</tr>
<tr>
<td>Yes, in past 3 months</td>
<td>20</td>
</tr>
</tbody>
</table>
### Patterns of Cannabis Use: ASSIST Questions

<table>
<thead>
<tr>
<th>Q7. Ever tried to control, cut down or stop using cannabis but failed in attempts</th>
<th>Moderate-High Risk Cannabis Users (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, Never</td>
<td>68</td>
</tr>
<tr>
<td>Yes, but not in past 3 months</td>
<td>13</td>
</tr>
<tr>
<td>Yes, in past 3 months</td>
<td>19</td>
</tr>
</tbody>
</table>
Polysubstance use among patients with moderate-high risk cannabis use

<table>
<thead>
<tr>
<th>Type of Substance and Level of Use</th>
<th>Overall Sample</th>
<th>Moderate-to-High Risk Cannabis Users</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Any substance</strong> (including tobacco and alcohol)</td>
<td></td>
<td></td>
<td>&lt;·0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>70</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>30</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td><strong>Any drug</strong> (excluding tobacco and alcohol)</td>
<td></td>
<td></td>
<td>&lt;·0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>87</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>13</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>
Polysubstance use among patients with moderate-high risk cannabis use

<table>
<thead>
<tr>
<th>Type of Substance and Level of Use</th>
<th>Overall Sample</th>
<th>Moderate-to-High Risk Cannabis Users</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opiates</strong></td>
<td>%</td>
<td>%</td>
<td>&lt;·0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>95</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>5</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>
Polysubstance use among patients with moderate-high risk cannabis use

<table>
<thead>
<tr>
<th>Type of Substance and Level of Use</th>
<th>Overall Sample</th>
<th>Moderate-to-High Risk Cannabis Users</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td></td>
<td></td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>80</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>20</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>85</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>15</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Cocaine/crack</td>
<td></td>
<td></td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>96</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>4</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>
Polysubstance use among patients with moderate-high risk cannabis use

<table>
<thead>
<tr>
<th>Type of Substance and Level of Use</th>
<th>Overall Sample</th>
<th>Moderate-to-High Risk Cannabis Users</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amphetamines</strong></td>
<td></td>
<td></td>
<td>&lt;·0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>94</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>6</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td><strong>Inhalants</strong></td>
<td></td>
<td></td>
<td>&lt;·0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>98</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>2</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Sedatives</strong></td>
<td></td>
<td></td>
<td>&lt;·0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>95</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>5</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td><strong>Hallucinogens</strong></td>
<td></td>
<td></td>
<td>&lt;·0001</td>
</tr>
<tr>
<td>Low risk</td>
<td>98</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>Moderate-high risk</td>
<td>2</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>
Sample characteristics by level of cannabis use (N=2066)

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Overall</th>
<th>Lifetime Use</th>
<th>Moderate-High Risk Use (ASSIST 4+)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>34</td>
<td>12</td>
</tr>
<tr>
<td>Demographics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (female)</td>
<td>68</td>
<td>53</td>
<td>40</td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>26</td>
<td>36</td>
<td>39</td>
</tr>
<tr>
<td>26-54</td>
<td>59</td>
<td>57</td>
<td>53</td>
</tr>
<tr>
<td>=&gt;55+</td>
<td>15</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Education (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 11</td>
<td>29</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>12</td>
<td>35</td>
<td>40</td>
<td>41</td>
</tr>
<tr>
<td>13-15</td>
<td>24</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>16+</td>
<td>12</td>
<td>14</td>
<td>9</td>
</tr>
</tbody>
</table>
## Sample characteristics by level of cannabis use (N=2066)

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Lifetime Use</th>
<th>Moderate-High Risk Use (ASSIST 4+)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country of Birth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US Born</td>
<td>52</td>
<td>82</td>
<td>85</td>
</tr>
<tr>
<td>Foreign born</td>
<td>48</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Homeless, last night</td>
<td>2</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Pregnant, women</td>
<td>13</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Chronic condition</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
</tbody>
</table>
Log-binomial regressions for correlates of moderate-to-high risk cannabis use (ASSIST ≥ 4; n=2066, Prevalence Ratio)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>PR</th>
<th>APR</th>
<th>APR with interaction terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (Female)</td>
<td>0.26***</td>
<td>0.25***</td>
<td>0.31***</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-54</td>
<td>0.55***</td>
<td>0.73</td>
<td>0.75</td>
</tr>
<tr>
<td>55+</td>
<td>0.28***</td>
<td>0.56*</td>
<td>0.58</td>
</tr>
<tr>
<td>Education (# years)</td>
<td>1.09***</td>
<td>0.97</td>
<td>0.96</td>
</tr>
<tr>
<td>Homeless, last night</td>
<td>4.28***</td>
<td>2.03*</td>
<td>2.13*</td>
</tr>
<tr>
<td>Country of birth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US born</td>
<td>Ref.</td>
<td>Ref.</td>
<td>Ref</td>
</tr>
<tr>
<td>Foreign born</td>
<td>0.16***</td>
<td>0.17***</td>
<td>0.27***</td>
</tr>
<tr>
<td>Interaction term: Country of birth x gender (F vs. M in foreign born)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female vs. male in foreign born</td>
<td>--</td>
<td>--</td>
<td>0.19**</td>
</tr>
</tbody>
</table>
Percentage of moderate-high risk cannabis use by country of birth and gender

<table>
<thead>
<tr>
<th>Country of Birth</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>US born (N=1,077)</td>
<td>33%</td>
<td>0%</td>
</tr>
<tr>
<td>Foreign born (N=982)</td>
<td>13%</td>
<td>11%</td>
</tr>
</tbody>
</table>
Summary: Cannabis Use among Latino FQHC Patients in LAC

- Much **higher rates of moderate-high cannabis use** than US general population (NSDUH) (18-25yo: 19% vs. 5% and 26+ yo 11% vs. 0.8%)

- **Foreign born** Latinos had much **lower prevalence** of moderate-high risk cannabis use than those born in the U.S (APR 0.27)

- **Females** were two-thirds **less likely** than males to experience moderate-high risk cannabis use (OR 0.31)

- **Foreign-born females** had the **lowest** prevalence of moderate-high risk cannabis use (0.7%)

- **Male gender, birth in the US, and homelessness** were the primary factor associated with moderate to high risk cannabis use

- **Poly-substance use** was prevalent among individuals with moderate-high risk cannabis use
Summary: Effect of US Culture on Cannabis Use

- Consistent with prior literature, substance use patterns and the development of substance use disorders among Latinos is influenced by longer residence in the United States and acculturation.
- Factors unique to the U.S. culture elevate risk of cannabis use and cannabis use disorder:
  - Declining perceived risk of cannabis use -- view that cannabis is “medicinal”
  - Inconsistency in physician counseling may also play a role
- Given legalization of recreational cannabis use in California and other states, health care providers will need to develop new approaches for discussing the risks of cannabis use, and to counsel pregnant women regarding risks to the fetus.
Summary: Polysubstance Use

- Nearly half of those with moderate-high risk cannabis use also scored in the moderate-high risk level on the ASSIST for other drugs; tobacco (54%) and alcohol (47%)

- Public health campaigns and counseling successfully generated awareness that tobacco carries significant risks and as a result, cigarette use has decreased nationally. A similar approach may also be reasonable for cannabis
  - Those who use cannabis together with tobacco may elevate risk of asthma, bronchitis and malignancy
  - Those who use cannabis along with alcohol may elevate risk of memory loss and motor vehicle accidents may encourage patients to modify patterns of use
Future Research

- We expect these prevalence estimates of cannabis use to increase following the recent California legislation that legalized recreational cannabis use.
- Prevention and screening services for moderate-to-high risk cannabis use should be considered as part of routine primary care to reduce risky cannabis use and prevent more serious cannabis use disorders requiring substance use specialty treatment among the Latino community.
- Research needed to understand the US cultural factors (beyond legal status) that promote cannabis use.
- Research needed on impact of California’s cannabis legalization upon primary care patients’ physical health, mental health, social health, fetal health, and healthcare utilization.
QUIT RCT
Aims of Presentation: QUIT

- To describe rates of illicit and untreated drug use based on ASSIST scores among adult primary care (PC) patients in Community Health Centers (FQHCs) in Los Angeles County, screened in the UCLA “QUIT” Study.

- To assess the efficacy of the primary care clinician brief QUIT intervention compared to a usual care protocol in reducing risky cannabis and other drug use among low-income, racially-diverse patient populations.

**Hypothesis.** At 3 months post-randomization, the intervention group will have a greater decrease in the # of days they used drugs in the past 30 days, when compared to the control group.
Design

- **Design:** single-blind RCT
- **Setting/Sample:** patients of primary care clinic sessions in 5 of the largest federally qualified community health centers (FQHCs) in Los Angeles County
- **Recruitment period:** 2/25/2011 – 11/2/2012
- **Duration of follow-up, post-enrollment**
  - **Goal:** 3 months
  - **Actual months:** mean 3.9, SD 1.7, Median 3.4
QUIT Intervention

1. Very brief clinician advice (3-4 min)
2. Video doctor/doctora to reinforce clinician advice (2 min)
3. Health education booklet regarding drug use
4. 2 Telephone health education sessions
   Conducted by college graduates (non-medical)
QUIT Intervention: Primary Care Clinician

“Summary to Clinician”
- Risky drug use of highest scoring drug (HSD)
- Risky use of other substances
- Suggested counseling script

Clinician advice, very brief, 3-4 minutes
- “You are at risk for developing health problems from your current drug use”
- “Drug addiction is a chronic disease of the brain”
- “Quit/reduce drug use now before it’s too late”

Drug Intervened upon:
- Highest Scoring Drug (HSD): Highest scoring drug used in risky range in past 3 months at baseline (ASSIST 4-26) and used it in past 30 days
UCLA LIVING WELL STUDY
SUMMARY REPORT TO CLINICIAN
CLINICIAN INTERVENTION

Please paraphrase the following script to counsel your patient.

1. YOU SCORED ‘AT RISK’ FOR DEVELOPING A ____________________ DISORDER on your waiting room questionnaire. This is a very important health problem that I would like to address today.

2. YOU ARE AT RISK FOR DEVELOPING HEALTH PROBLEMS FROM YOUR CURRENT PATTERN OF ____________________ USE. A ____________________ disorder is a CHRONIC RELAPSING BRAIN DISEASE that has long-term permanent affects to your mind and body.

3. It is important that you STOP OR REDUCE your use of ____________________ now before it becomes a chronic brain disease, since you still may have the power do so.

4. ARE YOU WILLING IN THE NEXT MONTH TO STOP OR REDUCE YOUR USE OF ____________________? If in the next few weeks you find you cannot stop using after choosing to stop, you may be progressing toward addiction.

If Patient Tests Positive for Addiction or At Risk Use of Other Substances Include the Following:

5. I am also concerned about your RISKY USE of ____________________, and your symptoms of ADDICTION to ____________________, which make(s) it harder to stop using and speeds up your risk of becoming addicted to ____________________.

6. Are you willing to REDUCE or STOP using ____________________ now or in the next month?

For ALL Patients

7. One of our Living Well Coaches will call you in 2 weeks and again in 6 weeks to see how things are going.

8. Here is a Health Education Booklet and Report Card of your questionnaire responses regarding your substance use for you to review at home.
QUIT Intervention: Follow-up Support

- Telephone health education sessions
  - Two 20-30 minute telephone calls at 2 and 6 weeks
  - Delivered by trained, non-medical staff, who could engage patients
  - Regarding reducing/ quitting drug use of HSD
  - Motivational Interviewing and Cognitive Behavioral Techniques
  - Informally addressed quality of life barriers to drug use spontaneously raised by patients and made relevant referrals (clinic, community)
  - Weekly Health Coach “Learning Community” Sessions (fidelity & support)
Methods: Training

- Primary Care Provider Training
  - Training 15 minutes in medical staff meeting
  - 1-2 minute one-on-one reminder session before conducting the first intervention

- Health Coach Training
  - 4 sessions, totaling 12 hours
  - Motivational interviewing, cognitive behavioral techniques, rehearsing mock health coach calls until proficiency was obtained.
  - Trainees shadowed experienced coaches (i.e. listened-in on actual calls with patient permission)
  - Initial calls were observed for supervision and feedback
Control Condition

- Usual care
- Cancer screening messages
  - Video Doctor after primary care provider visit
  - Health Education Booklet
Consent/Randomization

- Consent to Trial
  - Study Approved by UCLA IRB
  - Masked purpose of study – termed “Living Well Study” to promote healthy lifestyles including healthy eating, physical activity, and reduction of tobacco, alcohol, and drug use; list of chronic conditions
- Baseline data collection (40 minutes)
- Randomization by EMMA (our data collection program)
  - Urn Randomization: lower risky use (ASSIST 5-16) vs. higher risky use (ASSIST 17+)
Incentives

- $30  Initial Visit
- $50  3 Month Assessment
- $500 Lottery (if completed all activities)
Main Outcome Variable

- Highest Scoring Drug (HSD)
  - Highest scoring drug used in risky range in past 3 months (ASSIST 4-26)
  - If risky use of stimulants, stimulants were always selected as HSD (believed to be the most common illicit drug used)

- Main Outcome Variable
  - At 3 months, decrease in # days used HSD in past 30 days
  - Urine drug testing conducted at baseline and follow-up
A Behavioral Model of a QUIT Intervention For Risky Drug Use by Community Clinic Patients

Gelberg, Andersen, & Leake, Behavioral Model for Vulnerable Populations, 2000
Analysis Plan

- Estimation of treatment effects using linear regression
  - Adjusted for all baseline variables associated with follow-up HSD use at the 0.15 level
  - Parsimonious final models were obtained by manually removing covariates one at a time in descending order of p values

- “Complete” sample analysis

- “Completed” sample analysis (intent-to-treat)
  - Sensitivity analysis for patients completing 3-month follow-up, for which missing values of 3-month HSD use were replaced with baseline HSD use (last observation carry forward--LOCF)
  - Multiple imputation (SAS 9.3 PROCs MI and MIANALYZE) was used to estimate missing values for predictors
  - Interactions of group with a variety of variables were also tested in regression models: Frequency of baseline HSD use, age, gender, race/ethnicity, different drugs, and # counseling sessions
Potential Confounders

None of the variables in our theoretical model met criteria for being a confounder except for:

- The control group, compared to the intervention group, felt somewhat more confident in their ability to reduce their HSD use
RESULTS
QUIT CONSORT Flow Diagram

**Enrollment**

- Assessed for eligibility (Approached) (n = 15,685)
  - Excluded (n = 15,351)
    - Not meeting inclusion criteria (n = 12,497)
    - Declined to participate (n = 2,854)
      (Not interested, no time, declined to consent)

**Randomized** (n = 334)

- **INTERVENTION** (n = 171)
  - Received allocated intervention (n = 171)
  - Did not receive allocated intervention (n = 0)
- **CONTROL** (n = 163)

**Allocation**

**3 Mo Follow-Up**

- **INTERVENTION** (n = 129) (75%)
  - Lost to follow-up (phone disconnected, not responding to calls, e-mails, or mail) (n = 27)
  - Discontinued intervention (pts wanted to be withdrawn, thought they were wrongfully enrolled, did not want to do any follow-up) (n = 6)

- **CONTROL** (n = 135) (83%)
  - Lost to follow-up (phone disconnected, not responding to calls, e-mails, or mail) (n = 27)
  - Discontinued (pt did not want to be part of study, did not want to do 3 month assessment) (n = 1)

**Analysis**

- Analysed (n = 129)
  - Excluded from analysis (n = 0)
- Analysed (n = 132)
  - Excluded from analysis (received health education intervention n = 3)
# High Rates of Drug Use

<table>
<thead>
<tr>
<th>Level of Drug Use</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=3,724</td>
<td></td>
</tr>
<tr>
<td>High Use (“risk for dependence”) (ASSIST 27+)</td>
<td>6.9%</td>
</tr>
<tr>
<td>Moderate Use (‘risky drug use”) (ASSIST 4-26)</td>
<td>20.2%</td>
</tr>
<tr>
<td><strong>Total: Moderate or High Use</strong></td>
<td><strong>27.1%</strong></td>
</tr>
</tbody>
</table>

*Risky and dependent drug use rates varied greatly by clinic (2%-42%). For example, Clinic D had 2% high use and Clinic A had 42% high use.*
Most Common Drugs: Cannabis, Stimulants
Drug use at least as prevalent as alcohol/tobacco

<table>
<thead>
<tr>
<th>Substance</th>
<th>Level of Drug Use (N=3,724)</th>
<th></th>
<th></th>
<th>EITHER MODERATE OR HIGH USE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moderate Use (&quot;Risky Use&quot;)</td>
<td>High Use (&quot;Risk for Dependence&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drugs:</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Cannabis</td>
<td>15.5</td>
<td>3.3</td>
<td><strong>18.8</strong></td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td>8.1</td>
<td>3.0</td>
<td><strong>11.1</strong></td>
<td></td>
</tr>
<tr>
<td>Amphetamines</td>
<td>6.4</td>
<td>1.9</td>
<td><strong>8.3</strong></td>
<td></td>
</tr>
<tr>
<td>Opiates</td>
<td>7.5</td>
<td>2.1</td>
<td><strong>9.6</strong></td>
<td></td>
</tr>
<tr>
<td>Sedatives</td>
<td>6.8</td>
<td>1.8</td>
<td><strong>8.6</strong></td>
<td></td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>3.4</td>
<td>0.4</td>
<td><strong>3.8</strong></td>
<td></td>
</tr>
<tr>
<td>Inhalants</td>
<td>2.0</td>
<td>0.5</td>
<td><strong>2.5</strong></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>20.2</td>
<td>6.9</td>
<td><strong>27.1</strong></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>13.5</td>
<td>6.4</td>
<td><strong>19.9</strong></td>
<td></td>
</tr>
<tr>
<td>Tobacco</td>
<td>24.8</td>
<td>6.2</td>
<td><strong>30.0</strong></td>
<td></td>
</tr>
</tbody>
</table>
Nearly All Risky Drug Users’ Use Additional Substances

<table>
<thead>
<tr>
<th>Risky Drug Use</th>
<th>% Risky or Dependent Use of At Least One Additional Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis (N=578)</td>
<td>85.1%</td>
</tr>
<tr>
<td>Cocaine (N=301)</td>
<td>96.0%</td>
</tr>
<tr>
<td>Amphetamines (N=237)</td>
<td>95.4%</td>
</tr>
<tr>
<td>Opiates (N=279)</td>
<td>91.4%</td>
</tr>
<tr>
<td>Sedatives (N=252)</td>
<td>88.5%</td>
</tr>
<tr>
<td>Hallucinogens (N=125)</td>
<td>99.2%</td>
</tr>
<tr>
<td>Inhalants (N=73)</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Sample Characteristics of Risky Drug Using Primary Care Patients Randomized into QUIT Trial

<table>
<thead>
<tr>
<th>Predisposing: Demographics/Social Structure</th>
<th>Total N = 334</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years (mean)</td>
<td>41.7</td>
</tr>
<tr>
<td>Male %</td>
<td>62.9</td>
</tr>
<tr>
<td>Race/Ethnicity %</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>37.7</td>
</tr>
<tr>
<td>African American</td>
<td>22.8</td>
</tr>
<tr>
<td>Latino</td>
<td>33.8</td>
</tr>
<tr>
<td>Other</td>
<td>5.7</td>
</tr>
</tbody>
</table>

| Enabling:                                   |              |
| Income <$500 past mo %                     | 58.0         |
| Insurance, past 3 mo %                     | 32.7         |
| General health status, fair/poor %         | 41.1         |
## Sample Characteristics: Need

<table>
<thead>
<tr>
<th>DRUG USE, CURRENT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSIST Score, Highest Scoring Drug (mean, range 4-26)</td>
<td>14.5</td>
</tr>
<tr>
<td>Highest Scoring Drug %</td>
<td></td>
</tr>
<tr>
<td>Cannabis</td>
<td>51.9</td>
</tr>
<tr>
<td>Cocaine/Crack</td>
<td>20.1</td>
</tr>
<tr>
<td>Methamphetamine/Amphetamine Type Stimulants</td>
<td>12.3</td>
</tr>
<tr>
<td>Sedatives</td>
<td>8.7</td>
</tr>
<tr>
<td>Opiates</td>
<td>6.6</td>
</tr>
</tbody>
</table>

N = 334
# Days Used Highest Scoring Drug, Past 30 days, at Baseline and 3 Months\(^a\)

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>3 Month Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Control Group N=132</td>
<td>10.7</td>
<td>10.8</td>
</tr>
<tr>
<td>Intervention Group N=129</td>
<td>10.6</td>
<td>11.2</td>
</tr>
</tbody>
</table>

33% REDUCTION

- a. Based on complete cases with three-month data
- b. No program difference; p=.388; Wilcoxon two-sample test
- c. Trend for program difference; p=.069; Wilcoxon two-sample test
- d. Program difference; p=.042; median two-sample test
**Average QUIT Treatment Effect on Risky Drug Use**

<table>
<thead>
<tr>
<th>Total Sample</th>
<th>Effect (reduction in 30d drug use, at 3 month f/up)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Sample N=252</td>
<td>3.46</td>
<td>0.001</td>
</tr>
<tr>
<td>Completed Sample N=334</td>
<td>2.21</td>
<td>0.005</td>
</tr>
</tbody>
</table>

a. Decrease in 30 Day Use of Highest Scoring Drug
b. Controlling for 18 potential covariates
Stratified Analysis, by Baseline Level of Risky Drug Use of HSD

- 30 Day use of HSD
  - High Median
    - 5+ days
  - Low Median
    - 0-4 days
Median # Days Used Highest Scoring Drug, Past 30 days, at Baseline and 3 Months\textsuperscript{a}

“High” Risky Users at Baseline\textsuperscript{a}

5+ days past month, N=180

Completed Sample

<table>
<thead>
<tr>
<th>Group</th>
<th>Baseline\textsuperscript{b} (median days)</th>
<th>3 Month Follow-up\textsuperscript{b} (median days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control N=74</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Intervention N=67</td>
<td>21 (p=.419)</td>
<td>6 (p=.001)</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Based on completed cases with three-month data

\textsuperscript{b} Wilcoxon two-sample test for group difference
Average QUIT Treatment Effect for “High” Risky Users at Baseline\textsuperscript{a}  
(5+ days past month, N=180)

<table>
<thead>
<tr>
<th>Completed Sample\textsuperscript{c}</th>
<th>Effect (reduction in 30d drug use, at 3 month f/up) \textsuperscript{b}</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.41</td>
<td>0.003</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Decrease in 30 Day Use of Highest Scoring Drug  
\textsuperscript{b} Controlling for 18 baseline potential covariates  
\textsuperscript{c} Completed Sample: LOCF + Multiple Imputation
### HSD Change as a Function of Drug

#### Mean Decrease in 30 day Drug Use at 3 Months

<table>
<thead>
<tr>
<th>HSD</th>
<th>Control mean(^a) (n)</th>
<th>Intervention mean(^a) (n)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis</td>
<td>11.72 (68)</td>
<td>9.22 (69)</td>
<td>2.51</td>
</tr>
<tr>
<td>Cocaine/Crack</td>
<td>6.16 (20)</td>
<td>3.39 (30)</td>
<td>2.77</td>
</tr>
<tr>
<td>Amphetamine Type</td>
<td>6.86 (14)</td>
<td>6.85 (14)</td>
<td>0.01</td>
</tr>
<tr>
<td>Stimulants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sedatives</td>
<td>9.40 (16)</td>
<td>5.20 (8)</td>
<td>4.19</td>
</tr>
<tr>
<td>Opiates</td>
<td>11.63 (12)</td>
<td>3.81 (8)</td>
<td>7.82</td>
</tr>
</tbody>
</table>

\(^a\) Adjusted for baseline HSD use, Completed sample
Interactions

- Interactions of group with age, gender, race/ethnicity, mental health status, homeless status were not significant

- Drug type
  - When the complete sample reduced regression model was fit to data for patients whose HSD was cannabis, and for those whose HSD was cocaine, a sedative or an opiate, intervention patients used less than controls (both p<0.01)

- Secondary Outcomes
  - Patients in the complete sample who reduced (baseline – follow-up) their HSD use by a day or more also had reductions of 1.2 days for alcohol, 3.7 days for tobacco, and 4.1 days for cannabis (all p<0.001). No significant changes were observed for other non-HSD drugs.
# Health Education Sessions

- 83% of intervention patients had the first coaching session
- 54% had 2 sessions
- Those who completed 2 sessions reduced their frequency of drug use (4.0 days, p<.001) more than patients who completed 0 or 1 session (average 3.5 days, p=.017)
- Strong effects were found for intervention patients with two telephone sessions versus controls (complete and completed samples, p<0.001)
Urine Testing Results

- Under-reporting was calculated for self-reported HSD (% patients testing positive who did not disclose use of their HSD)

- At follow-up control patients had a numerically higher rate of underreporting than intervention patients:
  - Baseline 5.9% (I:5.0%, C:7.3%)
  - 3 months 8.2% (I:5.3%, C:11.4%)

- Regression model rerun for 96 patients whose self-reports of HSD use and urine drug test results at follow-up agreed (both positive or both negative), the reduction in HSD use was 5.52 days greater for the intervention than for the control group (p<.001)
QUIT-BINATIONAL STUDY
Aims of Presentation: QUIT-Binational

- To assess the efficacy of a pilot replication of the primary care-based QUIT intervention compared to a usual care protocol in *reducing risky cannabis and other drug use* among low-income, mostly Latino, patients of federally qualified health centers.
Design

- Design: single-blind RCT
  - ClinicalTrials.gov ID: NCT01942811
- Sample: Primary care patients
- Sites
  - Federally Qualified Community Health Center in East Los Angeles - one of the original QUIT study sites
  - Primarily serves low-income Latino patients
- Recruitment period: March-July 2013
- Duration of follow-up, 3 months post-enrollment
Exclusion Criteria

- Same exclusions as QUIT, with additional exclusion of:
- In substance use treatment, past 3mo
Receipt of Intervention

- All 32 intervention patients received clinician brief advice
- 22 patients (69%) had at least 1 telephone session
- 15 patients (47%) had both sessions
Disposition of Screened Cases

- 1,379 patients completed ASSIST
  - 1,274 Ineligible for study
    - 1,101 not risky drug users
  - 105 Eligible for study
    - 40 did not complete enrollment process
- 65 current risky drug users enrolled and randomized into the trial
  - 32 Intervention
    - 23 at 3 month follow-up
  - 33 Control
    - 28 at 3 months follow-up
Figure 1: CONSORT Diagram

Enrollment

Patients completing the ASSIST (n=1379)

- Excluded by ASSIST screener criteria (n=1274)
  - ASSIST 0-3, low drug use (n=970)
  - ASSIST 4-26, risky drug use, but not in the past month (n=58)
  - ASSIST 2+ high drug use (n=57)
  - ASSIST 2+ for alcohol only (n=26)
  - ASSIST 4-26, but drug used as prescribed (n=16)
  - Pregnant (n=130)
  - Not a general medical appointment (n=16)
  - No phone number where the patient can be reached for counseling or follow-up (n=1)

Eligible Risky Drug Using Patients (n=105)
  - Remainder of ASSIST 4-26

- Excluded – Unable to complete enrollment (n=40)
  - Patient declined to participate (n=13)
  - No time to complete enrollment (n=10)
  - Saw clinician before enrollment was completed (n=9)

Randomized/Enrolled (n=65)
**Demographic Characteristics**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n=65</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Mean, %</strong></td>
<td></td>
</tr>
<tr>
<td>Age, years</td>
<td>30.8</td>
</tr>
<tr>
<td>Education ≥ 12yrs</td>
<td>83</td>
</tr>
<tr>
<td>Male</td>
<td>59</td>
</tr>
<tr>
<td>Hispanic</td>
<td>94</td>
</tr>
<tr>
<td>U.S. Born</td>
<td>88</td>
</tr>
<tr>
<td>Homeless, lifetime</td>
<td>34</td>
</tr>
<tr>
<td>Income ≤ $500/mo</td>
<td>75</td>
</tr>
<tr>
<td>Insurance, past 3mo</td>
<td>56</td>
</tr>
<tr>
<td>Fair/poor health</td>
<td>38</td>
</tr>
</tbody>
</table>

* No significant differences by condition
# Highest Scoring Drug

<table>
<thead>
<tr>
<th>Drug Type of HSD:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=65</td>
</tr>
<tr>
<td>Mean, %</td>
<td></td>
</tr>
<tr>
<td>Cannabis</td>
<td>68</td>
</tr>
<tr>
<td>Stimulants</td>
<td>17</td>
</tr>
<tr>
<td>Cocaine/Crack</td>
<td>9</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>8</td>
</tr>
<tr>
<td>Opiates</td>
<td>12</td>
</tr>
<tr>
<td>Sedatives</td>
<td>3</td>
</tr>
<tr>
<td>Other (inhalants, hallucinogens)</td>
<td>0</td>
</tr>
<tr>
<td>HSD Use, baseline, # days past 30d</td>
<td>11.9</td>
</tr>
<tr>
<td>HSD ASSIST Score, Baseline (range 4-26)</td>
<td>14.4</td>
</tr>
<tr>
<td>Polydrug Use at Baseline, past 30d</td>
<td>32</td>
</tr>
</tbody>
</table>

* No significant differences by condition

HSD = Highest scoring drug in risky range (4-26) on baseline ASSIST
Baseline ASSIST Score for HSD on ASSIST conducted at screening
Urine Drug Testing

- Baseline: 58/65 patients (89%)
- 3 Month Follow-Up: 47/51 (92%)

Baseline
- Cannabis: 32 tested positive for cannabis at baseline and all 32 disclosed past month cannabis use
- Cocaine: 2 patients tested positive for cocaine, both self-reported its use.

At 3 month follow-up
- Cannabis: 18 patients (13 control, 5 intervention) tested positive for cannabis; all of these patients reported recent cannabis use.
- Stimulants: 3 control patients tested positive for cocaine and/or amphetamines - 1 for cocaine, 1 for amphetamines and 1 for both; all 3 disclosed their use of these drugs.

Thus, for all intervention and control patients with urine tests, self-reports of drug use were confirmed by the tests at both baseline and follow-up.
# Days Used HSD, Past 30 Days

<table>
<thead>
<tr>
<th>Study Arm</th>
<th>Baseline</th>
<th>Follow-up</th>
<th>Reduction Over Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Difference</td>
<td>.620</td>
<td>.003</td>
<td></td>
</tr>
<tr>
<td>Control Group (n=28)</td>
<td>12.64</td>
<td>12.93</td>
<td>-0.29</td>
</tr>
<tr>
<td>Intervention Group (n=23)</td>
<td>11.04</td>
<td>6.61</td>
<td>4.43</td>
</tr>
</tbody>
</table>

- **HSD =** Highest scoring drug in risky range (4-26) on WHO ASSIST
- **Baseline minus follow-up HSD use**
- **Wilcoxon two-sample test for group difference**
- **Paired t test for change**
Average QUIT-Binational Treatment Effect for Risky Users at Baseline

<table>
<thead>
<tr>
<th>Intent-to-treat linear regression for group difference in reduction(^a) in number of days used HSD(^b) in past 30 days (n=65)</th>
<th># Days (95% CI)(^c)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUIT Intervention Group (n=32) (ref: Control group, n=33)</td>
<td>4.46 (0.17, 8.74)</td>
<td>0.042</td>
</tr>
<tr>
<td></td>
<td>44% Decline</td>
<td></td>
</tr>
</tbody>
</table>

a. Baseline minus 3 month follow-up HSD use
b. HSD = Highest scoring drug in risky range (4-26) on baseline WHO ASSIST
c. Controlling for baseline HSD and potential confounders
Effect on Alcohol and Tobacco

- Among the 32 patients in the complete sample who reduced their HSD use by a day or more
- Alcohol: 28 patients who reported risky alcohol use reduced that use by an average of 0.3 days (median=0)
- Tobacco: 17 patients who disclosed smoking reduced their tobacco use by an average of 2.5 days (median=0)
- Neither change was significant (p>0.05, Wilcoxon signed rank test)
Results: Urine Drug Test Outcomes

- In logistic regression analysis of test results from 47 urine samples at 3 mo follow-up:
  - Intervention patients were less likely than controls to test HSD positive
  - OR: 0.10 (95% CI: 0.01, 0.99), p < 0.05
Replication of QUIT

- US – Mexico QUIT-Binational Study funded by US State Dept ONDCP, NIDA, US Embassy
- Goal of reducing drug demand along border areas
- March-July 2013
- We found similar screening rates & QUIT outcomes comparing intervention and control group:
  - 4.5 day reduction in drug use in the past month, 44% decline
  - Findings confirmed on urine drug testing outcomes

Gelberg et al. A pilot replication of QUIT. Drug and Alcohol Dependence, 2017
QUIT differs from recent negative trials (Saitz et al., Roy Byrne et al., JAMA 2014)\(^1\)

- QUIT included clinician brief advice, a key component of QUIT
  - Consistent with PC-based alcohol BI trials where biggest effect size and most robust outcomes were conducted in PC with the patients’ PCP conducting the intervention
  - Perhaps one of the most important variables that helps people change their health behaviors is the empathy, relationship, and trust with their family doctor
QUIT differs from recent negative trials (Saitz et al., Roy Byrne et al., JAMA 2014)²

- QUIT imbedded consent and measures in a larger behavioral health paradigm, which may have reduced the effect on the control group, “Living Well Study”
- QUIT did not include patients with serious drug use disorders, who may require more intensive treatment
- QUIT coaches learned that they needed to address patients’ quality of life barriers to drug use reduction in addition to focusing on drug use reduction strategies
- QUIT had shorter follow-up (3 mo vs 6-12 mo), but other trials did not find short-term changes
- QUIT used urine rather than hair as biomarker
- Weekly Health Coach Learning Community (for fidelity and support)
CONCLUSIONS
Summary

- High rates of moderate or high risk drug use in Community Health Center adult patients
  - 27% in QUIT; 19% in QUIT-Binational
- The QUIT intervention is efficacious
  - 33% reduction in 30 day drug use among intervention group. *Average treatment effect of 3.5 day reduction in HSD use*
  - In QUIT-Binational replication, 4.5 day reduction in drug use in the past month, 44% reduction
- The QUIT brief intervention was efficacious in reducing risky drug use in the 5 clinic organizations despite differing drug use & patient & clinic characteristics
Limitations

- **Self-Report Bias**
  - Patients self reported drug use (confirmed by urine drug testing outcomes)

- **External Validity/Representativeness**
  - 18% of patients were not interested in screening
  - 19% of eligible patients did not enroll in the study

- **Generalizability**
  - Limited to clinics that we sampled, some of which were selected because they were located in communities with high rates of drug use

- **Attrition**
  - 22% were lost-to-follow-up at 3 months (comparable to studies of low-income patients/drugs)

- **Contamination**
  - ASSIST can be seen as an intervention in itself so results may be conservative.
Conclusions

- Screen all FQHC patients for drug use
- Screening and brief intervention for risky cannabis and other drug use is feasible in primary care settings, and with low-income community health center patients
- Clinician’s report the QUIT intervention is feasible: they state that drug use assessment (screening and brief advice) could become part of their routine primary care practice
- High rates of polydrug use and polysubstance use among risky drug users (nearly all of them), suggests interventions focused on polysubstance use, rather than focused on one substance
Conclusions

- The Affordable Care Act and the Mental Health Parity and Addiction Equity Act have expanded behavioral health coverage to 62 million people who could benefit from screening for risky cannabis and other drug use in primary care settings such as community health centers.

- Integrating effective brief intervention protocols into primary care could have major public health impact for the 20 million risky drug users in the U.S.

- An implementation study of QUIT is needed to confirm its general applicability.
Future Research

- Conduct efficacy study of QUIT with longer follow-up period (12 - 24 months)
- Integrate mobile technology for sustaining and supporting behavior change – massively scalable
- Conduct effectiveness trial of QUIT using clinic staff to do the SUD screening and telephone health education sessions, integrate QUIT into the EHR
- Conduct efficacy trials of QUIT in different medical settings
- Additional intervention needed to enhance and sustain drug use over 12 months
- Assess impact of legalization of recreational marijuana use on patients’ use of cannabis and consequences (positive and negative)
With Much Appreciation

- NIDA, US State Department (ONDCP) US Embassy in Mexico – our funders
- Hendricks Brown, PhD and Juan Villamar from the Center for Prevention Implementation Methodology (Ce-PIM) NIDA P30 DA027828
- The hard working clinicians and staff of our study clinics
- The patients – who were willing to consider drug use behavior change!
With Much Appreciation

Colleagues

- Robert Ali, MD, The University of Adelaide
- Corey Arnold, PhD, UCLA Medical Imaging Informatics
- Alex Bui, PhD, UCLA Medical Imaging Informatics
- Michael Fleming, MD, Northwestern University
- Sonya Gabrielian, MD, VA Greater LA Healthcare System
- Mars Lan, PhD, UCLA Dept of Computer Science
- Michael McCoy, MD, Regenstrief Institute
- Howard Padwa, PhD, UCLA Semel Institute
- Anjani Reddy, MD, UCLA Dept of Family Medicine
- Majid Sarrafzadeh, PhD, UCLA Dept of Computer Science
- Steve Shoptaw, PhD, UCLA Dept of Family Medicine
With Much Appreciation

- Medical Directors of Study Clinics
  - Maria Chandler
  - Paul Gregerson
  - Karen Lamp
  - Elisa Nicholas
  - Jehni Robinson
  - Martin Serota

- Health Coaches
  - Nell Baldwin
  - Yohanna Barth-Rogers
  - Janet Beyan
  - Jacqueline Euan
  - Peggy Leung
  - Yu-Ming Ni
  - Alex Rice
  - Kelly Townsend
With Much Appreciation
Research Assistants

- Rahul Abraham
- Maureen Albia
- Claire Alvarenga
- Esther Baek
- Ryan Bakhit
- Nataly Barragan
- Daniel Benhuri
- Ben Benhuri
- Vasthi Becerra
- Ashley Brumell
- Cindy Chen-Wu
- Ryane Daniels
- Evelyn Diego
- Pauline Do
- Colleen Duro
- Phil Garrity
- Rahel Gebregziabher
- Nora Ghodousi
- Kidan Habtay
- Lea Heller
- Marissa Hernandez
- Niree Hindoyan
- Aida Martinez
- Sareen Melikian
- Hannah Mendoza
- Edward Mezian
- Blake Johnson
- Aram Kim
- Camille King
- Jinsol (Gene) Lee
- Jordan McCrary
- Angel Mendoza
- Jose Muniz Castro
- Maki Nakazato
- Christian Neckelmann
- Gem Nelson
- Osose Oboh
- Beverly Okereke
- Daniel Pak
- Hahnah Park
- Rakshya Pokharel
- Francesca Rozo
- Desiree Sanchez
- Henry Teaford
- Ashley Torkan
- Daniel Toro-Lira
- Clara Tsou
- Gina Tucker
- Mani Vahidi
- Anmy Vu
- Christine Vu
- Hugo Yepez
- Charlette Yoon
QUIT Publications


QUIT-Binational Publications


Contact Us

Lillian Gelberg, MD, MSPH
lgelberg@mednet.ucla.edu

Melvin Rico, Project Manager
MGironRico@mednet.ucla.edu