Mode of Entry and Quit Outcomes among Tobacco Users Utilizing Quitline Services

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Arizona Smokers' Helpline

Improving the Health of Arizonans
Arizona Smokers’ Helpline (ASHLine)

Vision and Mission

**MISSION**
Breathing vitality into the lives of Arizonans through Inquiry. Innovation. Inspiration

**VISION**
An Arizona where everyone achieves a healthy lifestyle.
Introduction

- Clinical and real-world effectiveness of quitlines have been well established
- Smokers utilizing quitline services are more likely to make quit attempts and quit than smokers who do not avail of quitlines (Fiore et al., 2008)
- Healthcare provider referral systems can expand quitline reach beyond traditional self-referral models
- Limited data investigating self-referral vs provider referral and quit outcomes are available
Referrals: Mode of Entry

- Proactive Referral - Provider
  - Fax or electronic referral submitted
  - Aligns with brief intervention models (e.g., 5As, AAR)
  - Quitlines reach out to referred clients

- Passive Referral - Provider
  - Less intensive than proactive referrals
  - Providers ‘passively’ refer clients by sharing quitline brochures or information and encouraging clients to call
  - Clients initiate the contact with the quitline

- Self-referral
  - Clients call the quitline independent of providers
  - Media ads, billboards, online, print, friends, family...
Evidence: Referrals and Quit Outcomes

• Vidrine et al. (2013): Among provider-referred clients, proactively referred clients were more likely to enroll in quitline services than passively referred clients.

• Guy et al (2012): Provider-referred clients (both proactively and passively referred) were significantly more likely to quit than self-referred clients.

• Long-term quit outcomes not influenced by mode of entry (i.e., self-referred vs. provider-referred) (Song et al., 2014)
Purpose

• Evidence pertaining to long-term quit outcomes based on mode of quitline entry requires further investigation

• Purpose: to compare quit outcomes among clients enrolled in a quitline across service modes of entry:
  
  • Provider proactively-referred
  • Provider passively-referred, and
  • Self-referred clients
Hypothesis

• Clients proactively referred through their healthcare provider will report greater quit rates at 7-month follow-up as compared to those passively referred or self-referred to the quitline
ASHLine’s Organization

ASHLine

Community Development
- Health systems change
- Brief Intervention Training (Ask, Advice, Refer)
- Generation of provider-referrals

Clinical Services
- Enrollment into services
- Provision of clinical services/coaching

Research and Evaluation
- Research (grants, manuscripts)
- Dissemination of ASHLine data
- Reports to stakeholders
- Program evaluation
  - QI/QC processes
  - Standardization of data collection

Survey (BMISR)
- 30-day surveys
- 7 and 13-m follow-up

IT/Communications
- Web-based software platform
- Development of outreach materials for providers and clients
- Media alignments
ASHLine Client Flow

Client Mode of Entry Into ASHLine:
- Proactively Referred by health care provider
- Passively Referred by health care provider
- Self-Refer (media, online)

INTAKE SURVEY (ENROLLMENT)
- Client demographics, tobacco use history, indoor tobacco/smoking bans

COACHING SESSIONS (QUIT COACHES)
- Weekly behavioral coaching sessions
- Provision or navigation to quit tobacco medications
- Coaching calls can continue up to 90 days after the client may have quit tobacco

30-DAY CLIENT SATISFACTION SURVEY (BMISR)
- 30 days post-enrollment
- Assess client satisfaction/comments about program

7 MONTH FOLLOW-UP SURVEY (BMISR)
- 7 months post-enrollment
- Questions pertain to tobacco behavior, quit tobacco meds use, etc.
Analysis Plan

- Descriptives to examine baseline differences across groups
- Direct entry logistic regression to compare quit outcomes across groups (as treated analysis)
- Controlling variables:
  - Age, race, insurance, nicotine dependence, chronic health condition, presence of mental health condition, other smokers in the home, support for quitting
Baseline Characteristics Across Groups (N=18,650)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Self n = 11,934</th>
<th>Passive n = 1768</th>
<th>Proactive n = 4948</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>51.6 ± 13.7</td>
<td>53.4 ± 13.6</td>
<td>52.1 ± 13.2</td>
</tr>
<tr>
<td>Fagerström score</td>
<td>4.8 ± 2.3</td>
<td>5.0 ± 2.3</td>
<td><strong>4.5 ± 2.3</strong></td>
</tr>
<tr>
<td>Male gender</td>
<td>45%</td>
<td>39.3%</td>
<td>43.3%</td>
</tr>
<tr>
<td>High school education or more</td>
<td><strong>86.6%</strong></td>
<td>82.5%</td>
<td>79.8%</td>
</tr>
<tr>
<td>Insurance type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>16.8%</td>
<td>29.4%</td>
<td>31.5%</td>
</tr>
<tr>
<td>Private</td>
<td>54%</td>
<td>55.7%</td>
<td>49.9%</td>
</tr>
<tr>
<td>Uninsured</td>
<td>29.2%</td>
<td><strong>14.9%</strong></td>
<td><strong>18.5%</strong></td>
</tr>
<tr>
<td>Chronic health</td>
<td>55.2%</td>
<td>69.7%</td>
<td>65.1%</td>
</tr>
<tr>
<td>Mental health</td>
<td>35.3%</td>
<td>46.6%</td>
<td>41.2%</td>
</tr>
<tr>
<td>High support for quitting</td>
<td>77.1%</td>
<td>79.9%</td>
<td>75.2%</td>
</tr>
<tr>
<td>Smokers at home</td>
<td>47.4%</td>
<td>49.8%</td>
<td>50.4%</td>
</tr>
</tbody>
</table>
Mode of Entry and Med Use at 7-m

Self-reported medication use during current quit attempt

- Proactively referred: 65.7%
- Passively referred: 70.6%
- Self-referred: 76.5%

Self-referred were significantly more likely to use medications to support quit
## Mode of Entry and Med Use at 7-m

<table>
<thead>
<tr>
<th>Mode of Entry</th>
<th>Model 1 OR (95% CI)</th>
<th>Model 2 OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Passive</td>
<td>0.74 (0.65–0.84)</td>
<td>0.88 (0.75–1.04)</td>
</tr>
<tr>
<td>Proactive</td>
<td>0.59 (0.54–0.64)</td>
<td>0.79 (0.70–0.88)</td>
</tr>
</tbody>
</table>

Model 1: unadjusted (crude model)
Model 2: adjusted for controlling variables

*Compared to self and passively-referred clients, proactive clients report a 21% lower use of cessation medication at 7-month follow-up*
Mode of Entry and # of coaching sessions

Mean number of coaching session across groups

- Proactively referred: 4.68 (sd=5)
- Passively referred: 5.08 (sd=5.6)
- Self-referred: 4.71 (sd=5.4)
Mode of Entry and # of Coaching Sessions

<table>
<thead>
<tr>
<th>Mode of Entry</th>
<th>Coaching sessions</th>
<th>Model 1 OR (95% CI)</th>
<th>Model 2 OR (95% CI)</th>
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<tbody>
<tr>
<td>Self</td>
<td></td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Passive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>1–2</td>
<td>1.10 (0.90–1.35)</td>
<td>1.06 (0.81–1.40)</td>
<td></td>
</tr>
<tr>
<td>3–4</td>
<td>1.07 (0.87–1.32)</td>
<td>1.04 (0.78–1.38)</td>
<td></td>
</tr>
<tr>
<td>5+</td>
<td>1.22 (1.00–1.48)</td>
<td>1.12 (0.86–1.47)</td>
<td></td>
</tr>
<tr>
<td>Proactive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>1–2</td>
<td>0.78 (0.69–0.88)</td>
<td>0.95 (0.79–1.14)</td>
<td></td>
</tr>
<tr>
<td>3–4</td>
<td>0.70 (0.61–0.79)</td>
<td>0.88 (0.72–1.06)</td>
<td></td>
</tr>
<tr>
<td>5+</td>
<td>0.81 (0.72–0.91)</td>
<td>0.99 (0.83–1.19)</td>
<td></td>
</tr>
</tbody>
</table>

Model 1: unadjusted (crude model)
Model 2: adjusted for controlling variables

No significant differences in # of in-program coaching sessions across groups
Mode of Entry and Quit Outcomes

Quit outcomes across groups

- Proactively referred: 36.8%
- Passively referred: 41.4%
- Self-referred: 41.2%
### Mode of Entry and Quit Outcomes

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<tbody>
<tr>
<td>Self</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Passive</td>
<td>1.01 (0.91–1.12)</td>
<td>1.15 (1.02–1.31)</td>
</tr>
<tr>
<td>Proactive</td>
<td>0.83 (0.78–0.89)</td>
<td>0.89 (0.82–0.98)</td>
</tr>
</tbody>
</table>

Model 1: unadjusted (crude model)  
Model 2: adjusted for controlling variables

**Compared to self-referred clients,**  
- **Proactively referred clients are 11% LESS likely to quit**  
- **Passively referred clients are 15% MORE likely to quit**

**Associations remain significant** even after controlling for medication use
Summary of Findings

• Proactively referred clients, but not passively referred ones, were less likely to self report use of tobacco cessation medication during their quit attempt.

• No differences were observed between mode of entry and number of coaching sessions.

• Proactively referred clients had lower rates of quitting as compared to passively referred and self-referred clients.
Discussion

• Literature suggests clients referred by healthcare providers are different from those who enroll on their own
  • Have greater comorbidities, less health insurance coverage, lower motivation to quit (Song et al., 2014; Willett et al., 2009)
  • Our data show more likely to be insured, more likely to report chronic and mental health conditions and to have smokers within the home

• Results show decreased quit rates compared to self-referred clients - not that proactively referred clients do not quit
  • 7m quit rate for proactively referred clients was 36.8%

• Despite lower quit rates, proactive referrals are an effective way for quitlines to enroll clients who otherwise may not have enrolled; these clients may need additional support to quit
What can be done?

• Quit lines should actively develop provider referral programs to complement self-referral

• Studies show that health care providers vary widely in implementation of tobacco treatment models (Gordon et al., 2007)

• Each year, ASHLine receives > 10,000 referrals from > 1500 providers across multiple locations

• Provider training may benefit from care setting-specific training protocols

• Need qualitatively study and evaluate the provider-client communication in relation to tobacco cessation referral process
Next Steps

• ASHLine has a team dedicated to providing AAR training to health care providers across the state
  • Tailored AAR trainings for medical, behavioral health, HIV/AIDS, and GSM-serving partners
  • Only a fraction of referring providers elect to scheduling training each year – thus, a notable percentage of referrals come from providers not directly trained by ASHLine staff

• Explore differences in client outcomes in referrals from providers who have been trained by ASHLine in AAR

• Explore differences in quit outcomes and program utilization services by health care sectors (e.g., behavioral health vs. acute care vs. in-patient facilities)
References


Questions?

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