Brief Report

Cell Phone Ownership and Service Plans Among Low-Income Smokers: The Hidden Cost of Quitlines

Steven L. Bernstein MD1,2,3, June-Marie Rosner MA, MEd1, Benjamin Toll PhD2,4,5

1Department of Emergency Medicine, Yale School of Medicine, New Haven, CT; 2Yale Comprehensive Cancer Center, Yale School of Medicine, New Haven, CT; 3Department of Health Policy, Yale School of Public Health, New Haven, CT; 4Department of Psychiatry, Yale School of Medicine, New Haven, CT; 5Department of Public Health Sciences, Medical University of South Carolina, Charleston, SC

Corresponding Author: Steven L. Bernstein, MD, Department of Emergency Medicine, Yale School of Medicine, 464 Congress Ave., Suite 260, New Haven, CT 06519, USA. Telephone: 203-737-3574; Fax: 203-785-4580; E-mail: Steven.bernstein@yale.edu

Abstract

Background: Quitlines (QLs) are free, effective sources of treatment for tobacco dependence. Although the QL number is toll-free, the use of cell phones as the sole source of telephony may impose an unintended cost, in terms of cell minutes.

Objectives: To quantify the use of cell-only telephony among self-pay or Medicaid smokers, assess their calling plans, and estimate the impact of a typical course of QL counseling.

Methods: A survey of smokers age at least 18 years visiting an American urban emergency department from April to July, 2013.

Results: Seven-hundred seventy-three smokers were surveyed, of whom 563 (72.8%) were low-income, defined as having Medicaid or no insurance. All low-income smokers had at least one phone: 48 (8.5%) reported land-lines only, 159 (28.2%) land-lines and cells, and 356 (63.2%) cells only. Of the cell phone owners, monthly calling plans provided unlimited minutes for 339/515 (65.8%), at most 250 minutes for 124 (24.1%), and more than 250 minutes for 52 (10.0%). Another recent trial found that QL users make a median of 1 call lasting 28 minutes, with the 75th and 90th percentiles of calls and minutes at 3 and 4 calls, and 48 and 73.6 minutes, respectively. Thus, robust use of QL services could consume 11%–29% of a low-income smoker’s typical 250 monthly cell minutes.

Conclusion: Among low-income smokers, cell phones are often the sole telephone. Robust use of the QL may impose a substantial burden on low-income smokers’ calling plans, and therefore deter use of the QL. Exempting calls to QLs from counting against smokers’ plans may help promote QL utilization.

Implications: Low-income individuals have high rates of smoking, and are more likely to own only cell phones, not landlines, for telephone access. Because cell phone calling plans often have limited numbers of monthly minutes, cell-only individuals may have to spend a substantial proportion of their monthly minutes on QL services. This may act as a deterrent to using an otherwise free, effective means of treatment for tobacco dependence. Exempting QLs from monthly calling plans may improve access for low-income smokers.
Introduction

Mobile health technologies have been proposed as an inexpensive, cost-effective, clinically efficacious way to improve health behavior. The ubiquity of cell phones in the United States and globally has resulted in an explosion of interest in the use of modalities such as short-message-service (SMS) texting and ecological momentary assessment. Smartphones, wearable biosensors, and other technologies promise to offer healthcare providers the ability to practice “automated hovering” over their patients,1 and help manage individuals with a variety of health-compromising behaviors, including smoking.

Telephone quitlines (QLs) provide a free, effective source of behavioral and pharmacologic treatment for tobacco dependence. QLs have shown efficacy in a variety of real-world settings.2,3 For lower income smokers, who are disproportionately likely to smoke, QLs offer a convenient, “free” means of accessing effective tobacco dependence treatment. In the United States, there is a national toll-free number that serves as a portal (1-800-QUIT-NOW) to the state QLs, although individual US states may sponsor their own phone numbers. Low-income individuals, however, often use cell phones as their sole means of telephone access.4 Home-based landlines are becoming less common. Because cell phone minutes must be paid for from the callers’ plan, it is possible that the use of cell phones as the sole source of telephone use for low-income smokers may impose an unintended cost, in terms of time charged to the calling plan.

The objective of this study was to quantify the use of cell-only telephony among self-pay or Medicaid smokers in an urban hospital, summarize the calling plans, and estimate the impact of a typical course of QL counseling for these individuals.

Methods

We surveyed self-identified adult smokers visiting a single urban hospital emergency department (ED) in the northeastern United States. The ED is a busy, 90 000 adult visit/year unit in a level one trauma center that serves a racially, ethnically, and economically diverse catchment area. Subjects endorsing current every- or some-day smoking, and lifetime consumption of at least 100 cigarettes, were included. Subjects with a variety of health-compromising behaviors, including smoking.

Telephone quitlines (QLs) provide a free, effective source of behavioral and pharmacologic treatment for tobacco dependence. QLs have shown efficacy in a variety of real-world settings.2,3 For lower income smokers, who are disproportionately likely to smoke, QLs offer a convenient, “free” means of accessing effective tobacco dependence treatment. In the United States, there is a national toll-free number that serves as a portal (1-800-QUIT-NOW) to the state QLs, although individual US states may sponsor their own phone numbers. Low-income individuals, however, often use cell phones as their sole means of telephone access.4 Home-based landlines are becoming less common. Because cell phone minutes must be paid for from the callers’ plan, it is possible that the use of cell phones as the sole source of telephone use for low-income smokers may impose an unintended cost, in terms of time charged to the calling plan.

The objective of this study was to quantify the use of cell-only telephony among self-pay or Medicaid smokers in an urban hospital, summarize the calling plans, and estimate the impact of a typical course of QL counseling for these individuals.

The ubiquity of cell phones in the United States and globally has resulted in an explosion of interest in the use of modalities such as short-message-service (SMS) texting and ecological momentary assessment. Smartphones, wearable biosensors, and other technologies promise to offer healthcare providers the ability to practice “automated hovering” over their patients,1 and help manage individuals with a variety of health-compromising behaviors, including smoking.

Telephone quitlines (QLs) provide a free, effective source of behavioral and pharmacologic treatment for tobacco dependence. QLs have shown efficacy in a variety of real-world settings.2,3 For lower income smokers, who are disproportionately likely to smoke, QLs offer a convenient, “free” means of accessing effective tobacco dependence treatment. In the United States, there is a national toll-free number that serves as a portal (1-800-QUIT-NOW) to the state QLs, although individual US states may sponsor their own phone numbers. Low-income individuals, however, often use cell phones as their sole means of telephone access.4 Home-based landlines are becoming less common. Because cell phone minutes must be paid for from the callers’ plan, it is possible that the use of cell phones as the sole source of telephone use for low-income smokers may impose an unintended cost, in terms of time charged to the calling plan.

The objective of this study was to quantify the use of cell-only telephony among self-pay or Medicaid smokers in an urban hospital, summarize the calling plans, and estimate the impact of a typical course of QL counseling for these individuals.

Methods

We surveyed self-identified adult smokers visiting a single urban hospital emergency department (ED) in the northeastern United States. The ED is a busy, 90 000 adult visit/year unit in a level one trauma center that serves a racially, ethnically, and economically diverse catchment area. Subjects endorsing current every- or some-day smoking, and lifetime consumption of at least 100 cigarettes, were included. Subjects with a variety of health-compromising behaviors, including smoking.

Telephone quitlines (QLs) provide a free, effective source of behavioral and pharmacologic treatment for tobacco dependence. QLs have shown efficacy in a variety of real-world settings.2,3 For lower income smokers, who are disproportionately likely to smoke, QLs offer a convenient, “free” means of accessing effective tobacco dependence treatment. In the United States, there is a national toll-free number that serves as a portal (1-800-QUIT-NOW) to the state QLs, although individual US states may sponsor their own phone numbers. Low-income individuals, however, often use cell phones as their sole means of telephone access.4 Home-based landlines are becoming less common. Because cell phone minutes must be paid for from the callers’ plan, it is possible that the use of cell phones as the sole source of telephone use for low-income smokers may impose an unintended cost, in terms of time charged to the calling plan.

The objective of this study was to quantify the use of cell-only telephony among self-pay or Medicaid smokers in an urban hospital, summarize the calling plans, and estimate the impact of a typical course of QL counseling for these individuals.

Discussion

In this survey of smokers visiting a single urban ED in the northeast United States, we found that all owned or had access to phone service. Nearly two-thirds of the low-income smokers had cell phones only. Of the low-income cell phone users (with or without landlines), one-quarter had limited monthly calling plans.

These results have important implications for the ability of some low-income smokers to access telephone QLs, and use them in a sustained fashion. QLs provide an important, accessible, confidential, cheap, efficacious, and cost-effective approach to tobacco control. The ubiquity of cell phones in the United States and globally has resulted in an explosion of interest in the use of modalities such as short-message-service (SMS) texting and ecological momentary assessment. Smartphones, wearable biosensors, and other technologies promise to offer healthcare providers the ability to practice “automated hovering” over their patients,1 and help manage individuals with a variety of health-compromising behaviors, including smoking.

Telephone quitlines (QLs) provide a free, effective source of behavioral and pharmacologic treatment for tobacco dependence. QLs have shown efficacy in a variety of real-world settings.2,3 For lower income smokers, who are disproportionately likely to smoke, QLs offer a convenient, “free” means of accessing effective tobacco dependence treatment. In the United States, there is a national toll-free number that serves as a portal (1-800-QUIT-NOW) to the state QLs, although individual US states may sponsor their own phone numbers. Low-income individuals, however, often use cell phones as their sole means of telephone access.4 Home-based landlines are becoming less common. Because cell phone minutes must be paid for from the callers’ plan, it is possible that the use of cell phones as the sole source of telephone use for low-income smokers may impose an unintended cost, in terms of time charged to the calling plan.

The objective of this study was to quantify the use of cell-only telephony among self-pay or Medicaid smokers in an urban hospital, summarize the calling plans, and estimate the impact of a typical course of QL counseling for these individuals.

Discussion

In this survey of smokers visiting a single urban ED in the northeast United States, we found that all owned or had access to phone service. Nearly two-thirds of the low-income smokers had cell phones only. Of the low-income cell phone users (with or without landlines), one-quarter had limited monthly calling plans.

These results have important implications for the ability of some low-income smokers to access telephone QLs, and use them in a sustained fashion. QLs provide an important, accessible, confidential, cheap, efficacious, and cost-effective approach to tobacco control.

Table 1. Characteristics of 563 Low-Income Smokers

<table>
<thead>
<tr>
<th>Variables</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years, mean</td>
<td>41.1</td>
</tr>
<tr>
<td>Daily cigarette consumption, median</td>
<td>8 (IQR 4, 15)</td>
</tr>
<tr>
<td>Sex, N (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>272 (48.3)</td>
</tr>
<tr>
<td>Female</td>
<td>291 (51.7)</td>
</tr>
<tr>
<td>Race/ethnicity, N (%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>103 (18.3)</td>
</tr>
<tr>
<td>African American</td>
<td>201 (35.7)</td>
</tr>
<tr>
<td>White</td>
<td>355 (63.1)</td>
</tr>
</tbody>
</table>

IQR = interquartile range.

Table 2. Phone Ownership and Minutes for Low-Income Subjects

<table>
<thead>
<tr>
<th>Phone ownership, N (%) (N = 563)</th>
<th>Landline only</th>
<th>Landline + cell</th>
<th>Cell only</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>48 (8.5)</td>
<td>159 (28.2)</td>
<td>356 (63.2)</td>
</tr>
</tbody>
</table>

Monthly cell minutes, N (%) (n = 515)

<table>
<thead>
<tr>
<th></th>
<th>&lt;250 minutes</th>
<th>250–500 minutes</th>
<th>&gt;500 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlimited</td>
<td>339 (65.8)</td>
<td>124 (24.1)</td>
<td>52 (10.0)</td>
</tr>
</tbody>
</table>

Monthly cell minutes, N (%) (n = 515)

<table>
<thead>
<tr>
<th></th>
<th>&lt;250 minutes</th>
<th>250–500 minutes</th>
<th>&gt;500 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlimited</td>
<td>339 (65.8)</td>
<td>124 (24.1)</td>
<td>52 (10.0)</td>
</tr>
</tbody>
</table>
dependence treatment. QLs are available in all 50 states, along with Washington, DC and Guam. They offer two evidence-based means of treatment: counseling and, often, medication in the form of nicotine replacement therapy. Most QLs offer multi-call programs, and quit rates appear higher with greater use of the QL. Some state QLs, like the Connecticut QL used in this study, limit the distribution of nicotine replacement therapy to smokers who enroll in the multi-call program. We previously reported, in a cohort of low-income smokers, that the probability of biochemically confirmed tobacco abstinence increased in proportion to the number and total duration of QL calls. For all subjects who called the QL, the cumulative median duration of use was 38 minutes, with the 75th and 90th percentiles of use at 56 and 86.2 minutes, respectively. Thus, robust use of QL services could consume 22%–34% of the 250 monthly cell minutes available to a smoker with a restricted calling plan.

This may represent an important economic barrier to low-income smokers’ using the QL. This is especially salient, given the disproportionate prevalence of smoking among low-income populations. Although we did not ask subjects directly, a well-established body of evidence describes the tradeoffs often made by low-income individuals among healthcare and housing, food, and the like. Given the need of these cell phone-only individuals to maintain contact with family and friends, employers, and, likely, public officials from agencies addressing criminal justice, child welfare, employment, public benefits, and healthcare, it would appear likely that use of a cell phone for QL-based tobacco counseling might be of lower priority.

Our findings suggest a policy solution: exempting calls to QLs from counting against an individual’s monthly calling plan. A reasonable place to start would be with publicly issued phones, like those provided by Medicaid. This would necessitate coordination among QL vendors and large providers of cell phone service. Conversely, a simple technical approach could be possible. For example, calls placed to the national QL phone number—1-800-QUIT-NOW—as well as state QL numbers—could be recognized by cell providers and exempted from calling plans. Given the high prevalence of smoking among low-income individuals, this policy change might have great impact in improving the accessibility of an important means of tobacco dependence treatment. Although there are other types of hotlines that might benefit from a similar policy (eg, suicide prevention, domestic violence, and sexual assault hotlines), smokers often require repeated contact with a QL to maximize the latter’s efficacy. To our knowledge, such policies do not exist at present, although the US Federal Communications Commission (FCC) offers services comparable to that of these other QLs.

Finally, we did not specifically ask study subjects if their monthly calling plans would represent, or have represented, a barrier to using the QL. Similarly, in our prior trial of ED-initiated tobacco dependence treatment, we did not ask subjects at follow-up if their calling plans inhibited their use of QL services. That was not an aim of either study.

Conclusion

Among low-income smokers, cell phones are often the sole means of telephone access, with many individuals having calling plans that limit the number of available minutes. Therefore, robust use of QLs may impose a substantial financial and logistical burden on low-income smokers, and may deter QL use.

A policy change exempting calls to QLs from counting against smokers’ cell phone calling plans may help to promote QL utilization. This should be the subject for further study.

Funding

This study was supported by grant R01CA141479 from the National Cancer Institute of the National Institutes of Health.

Declaration of Interests

None declared.

Acknowledgments

This manuscript was presented at 2014 Annual Meetings of the Society for Research on Nicotine and Tobacco (Seattle, WA) and Society for Academic Emergency Medicine (Dallas, TX).

References