Quitline follow-up survey response rates:
Why they matter and how to increase them

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Acknowledgements

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Clients

Clear Way
Hawaii Tobacco Quit Line
Florida Department of Health
7-month follow-up surveys
Threats to accuracy of survey results

- Measurement bias
- Consent bias
- Sampling bias
- Response bias

When survey responders differ from non-responders on a variable of interest
Definitions: survey response rate and quit rates

Sample size: 200

- Responders: 100
  - Quit: 30
  - Smoking: 70

- Non-responders: 100

Survey response rate: 100 / 200 = 50%

Responder quit rate: 30 / 100 = 30%

ITT quit rate: 30 / 200 = 15%
Key recommendations:

1. Target of 50% or higher for response rates
2. Report response rate
3. Interpret quit rates with caution

Case Studies

<table>
<thead>
<tr>
<th>Quitline</th>
<th>Enrollment period</th>
<th>Number sampled</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MN</strong></td>
<td>Mar ‘10 to Feb ‘11</td>
<td>1,287</td>
<td>62.5%</td>
</tr>
<tr>
<td><strong>HI</strong></td>
<td>Jan ‘10 to Jul ‘11</td>
<td>1,203</td>
<td>63.8%</td>
</tr>
<tr>
<td><strong>FL</strong></td>
<td>Jan ‘10 to Jun ‘11</td>
<td>3,430</td>
<td>48.3%</td>
</tr>
</tbody>
</table>

State icons from energycodes.gov.
Methods

Calculate the cumulative response rate after each day of the survey cycle

Determine quit rates, satisfaction, and age at each response rate

Graph the measures of interest by cumulative response rate
### Methods: calculating cumulative response rate

Example: We sampled 100 quitline participants for 4 weeks

<table>
<thead>
<tr>
<th>Day of survey cycle</th>
<th>Number of responders</th>
<th>Cumulative responders</th>
<th>Cumulative response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>27</td>
<td>27%</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>32</td>
<td>32%</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>34</td>
<td>34%</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>36</td>
<td>36%</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>37</td>
<td>37%</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>26</td>
<td>0</td>
<td>59</td>
<td>59%</td>
</tr>
<tr>
<td>27</td>
<td>0</td>
<td>59</td>
<td>59%</td>
</tr>
<tr>
<td>28</td>
<td>1</td>
<td>60</td>
<td>60%</td>
</tr>
</tbody>
</table>
Results: Quit rates

Quit rates (30-day point prevalence at 7 month follow-up)

Cumulative response rate

- Responder quit rate
- Intent-to-treat quit rate
Results: Quit rates

- Quit rates at 7 month follow-up:
  - 36%, 36%, 36%, 35%
  - 10%, 15%, 18%, 21%

- Cumulative response rate (%)

- Quit rate (30 day point prevalence)

- Responder quit rate
- Intent-to-treat quit rate
Results: Quit rates

Quit rate (30 day point prevalence at 7 month follow-up) vs. cumulative response rate

- Responder rate
- Intent-to-treat rate
Results: Satisfaction

Overall, how satisfied are you with the services you received from the quitline?

- Very satisfied
- Mostly satisfied
- Somewhat satisfied
- Not at all satisfied
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Results: Age
Results: Age
Results: Age

Average age (years)

Cumulative response rate

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

43.1
Summary of Results

• Responder quit rates declined with increasing response rate
• Satisfaction outcomes may be sufficiently accurate with response rates less than 50%
• Average age declined with increasing response rate
• 50% response rate target prudent in these examples
# Recommendations – response bias

## Questions to ask if you are a quitline funder

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the survey response rate?</td>
</tr>
<tr>
<td>What is the margin of error or confidence interval? e.g. 30.2% [27.2% - 33.2%]</td>
</tr>
<tr>
<td>How are the responders different than non-responders?</td>
</tr>
<tr>
<td>If there are differences, how does this alter your interpretation of the results?</td>
</tr>
<tr>
<td>What are you doing to increase response rate?</td>
</tr>
</tbody>
</table>
# Recommendations – response bias

## Recommendations for evaluators

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report survey response rate</td>
<td></td>
</tr>
<tr>
<td>Report confidence intervals</td>
<td></td>
</tr>
<tr>
<td>Conduct response bias analysis</td>
<td></td>
</tr>
<tr>
<td>Report results from response bias analysis for context</td>
<td></td>
</tr>
<tr>
<td>Increase response rate: 50% or higher!</td>
<td></td>
</tr>
</tbody>
</table>
Increasing response rates
Increasing response rates – PDA tips

- Read Don Dillman’s book
- Send pre-notification letters
- Use incentives
- Increase attempts (e.g. 15)
- Rotate calling times
- Rotate interviewers
- Hire talented interviewers
- Listen to survey calls
- Try multi-mode surveys
- Allow call-ins
- Allow scheduling call backs
- Use ‘best time to reach’
References

NAQC issue paper:
http://www.naquitline.org/resource/resmgr/docs/naqc_issuepaper_measuringqui.pdf

Survey methodology:

Calculating confidence intervals for proportions:
http://www.gmw.rug.nl/~huisman/spssmanual/proportions.xls

American Association of Public Opinion Researchers:
www.aapor.org