Can IVR Technologies Improve Quitline Efficiencies?

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BACKGROUND

✓ Quitlines are effective at delivering cessation support to large numbers of smokers. Most offer reactive and proactive services.

✓ Operational costs are a major impediment to the growth of Quitline services. In particular, proactive callbacks are laborious, often taking multiple calls to reach clients.

OBJECTIVE

To evaluate whether IVR improves the efficiency of reaching clients and to assess client reactions to IVR including service satisfaction.

METHODS

The NYSSQL offers a free "starter kit" of NRT to eligible smokers. Smokers who are sent NRT are called 1-2 weeks after their initial call to verify receipt and use of NRT and to assess side effects.
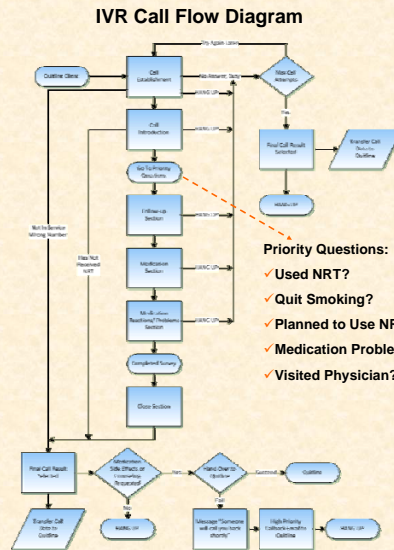
Smokers who received NRT in April – Sept. 2007 were randomized to either (1) the Standard Quitline callback group or (2) IVR callback group.

✓ In the Standard Quitline group, smokers are called by Quitline Specialists. Up to 5 attempts are made to reach smokers and the interview is conducted by Quitline Specialists.
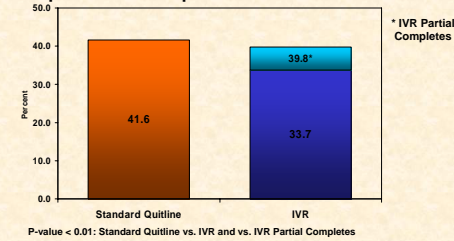
✓ In the IVR callback group, smokers are called by the IVR system and the interview is conducted by the IVR system. The IVR Call Flow is shown at the right.

Interactive Voice Response (IVR)

✓ IVR is an automated method of reaching participants and conducting complex telephone interviews.

✓ IVR, speech recognition and text to speech engines are used to collect data and provide reinforcing messages.

✓ The IVR system personalizes calls by addressing participants by name. Participants respond using natural speech.

✓ Participant response to the IVR system is maximized by prioritizing the Mandatory Questions and coding calls as "Partial Completes" when all of these questions are answered.

IVR Call Flow Diagram

Priority Questions:
✓ Used NRT?
✓ Quit Smoking?
✓ Planned to Use NRT?
✓ Medication Problems?
✓ Visited Physician?

Comparison of Completion Rates at 2 Weeks

* IVR Partial Completes

P-value < 0.01: Standard Quitline vs. IVR and vs. IVR Partial Completes

Completion Rates by Caller Characteristics

	Standard Quitline		IVR	
	Non-Completer	Completer	Non-Completer	Completer
Gender	n.s.		n.s.	
Male	53.6%	46.4%	66.9%	33.1%
Female	54.5%	45.5%	65.7%	34.3%
Age	†p-value <0.01		†p-value <0.01	
18 – 34	61.9%	38.1%	70.7%	29.3%
35 – 54	55.4%	44.6%	66.5%	33.5%
55 +	37.2%	62.8%	58.3%	41.7%
Race/Ethnicity	n.s.		†p-value <0.01	
White (non-Hispanic)	54.4%	45.6%	45.6%	35.7%
Black (non-Hispanic)	51.7%	48.3%	48.3%	26.3%
Hispanic	55.7%	44.3%	44.3%	23.8%
Other	53.1%	46.9%	46.9%	37.4%
Education	n.s.		*p-value <0.05	
Less Than High School	51.6%	48.4%	71.2%	28.8%
High School Grad	54.5%	45.5%	66.2%	33.8%
Some College	53.8%	46.2%	67.0%	33.0%
College Grad	55.2%	44.8%	63.8%	36.2%

* p-value <0.05; † p-value <0.01

Satisfaction With Quitline Service

P-value < 0.01

■ Standard Quitline ■ IVR
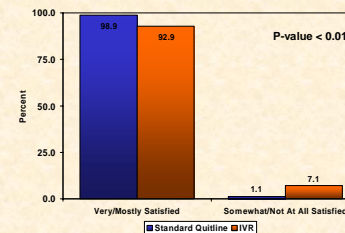
Cost-Effectiveness of Standard Quitline vs. IVR

	Standard Quitline	IVR
Clients With At Least 1 Call Attempt	6,696	5,642
Clients With Completed 2-Week FL	3,074	1,903
Clients With Partial Completes	N/A	340
Time to Follow-up Call	19	17
Cost per Completed Call	$18.51*	$9.07
Cost per Completed Call (IVR includes Partial Completes)	$18.51*	$7.70

* Includes overhead and phone costs

KEY FINDINGS

✓ Overall, completion rates for IVR were significantly lower than completion rates for the standard Quitline service. When including partial completes, the completion rate for IVR is nearly the same as the Quitline service, but still significantly different.

✓ The cost per complete for IVR is less than half the cost per complete for the standard Quitline service, meaning that IVR may be more cost-effective.

✓ IVR interview protocols need to be designed differently than telephone interview protocols to improve response.

✓ In the future, Quitline completion rates could be boosted by using IVR as a first-line method to reach Quitline clients, and having Quitline Specialists call back clients who do not respond to IVR calls.

CONCLUSION

Using IVR technology to make follow-up cessation support calls yielded fewer completed follow-up interviews than our standard Quitline service and may be more cost-effective. Further research comparing quit rates between groups is necessary.

ACKNOWLEDGEMENT