

Saving Lives, Saving Costs

Key Outcomes of the City's
Anti-Smoking Ads

2015 to 2019

From 2015 to 2019, the NYC Department of Health and Mental Hygiene (Health Department) led hard-hitting media campaigns encouraging smokers to quit. New analysis suggests that these campaigns not only boosted health outcomes — they were also highly cost-effective.

Background

From 2015 to 2019, the NYC Health Department launched anti-smoking media campaigns that encouraged smokers to call the New York State Smokers' Quitline. By calling the Quitline, smokers could access free support, including nicotine replacement therapy through resources such as nicotine patches and lozenges, to help them quit.¹ Prior studies by the New York State Department of Health estimate that this program prompted tens of thousands of people to quit smoking.²

Recently, the NYC Health Department analyzed the campaigns' impact on these additional outcomes:

- Premature deaths avoided
- Total life years saved
- Total years of good health gained
- Cost savings from the health impacts above
- Savings created by the campaigns compared to their cost (return on investment)

Findings

The analysis suggests that the Health Department's campaigns from 2015 to 2019 improved health outcomes for New Yorkers while generating a high return on investment:

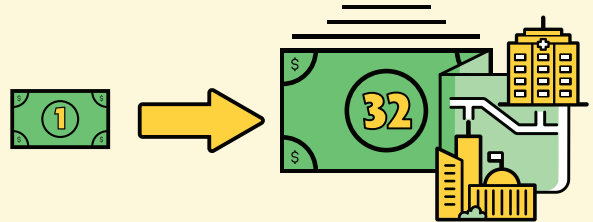
Health Wins

- Almost 8,000 successful quits
- More than 1,000 deaths avoided
- More than 12,000 birthdays saved that would have been lost
- More than 13,000 years of good health gained



Financial Wins

- The campaigns' return on investment was high — Every \$1 spent led to \$32 in cost savings for the health care system and society.
- The campaigns created an estimated \$864 million in total cost savings, including:
 - o \$26,000 for every premature death avoided
 - o \$2,200 for every birthday saved
 - o \$2,000 for every year of good health gained



To learn more about the Health Department's tobacco programs, go to nyc.gov/nycquits.

Research Details

Methods

- We reviewed data on the number of NYC residents whose decision to receive nicotine replacement therapy through the New York State Smokers' Quitline was attributable to the 2015 to 2019 media campaigns. To avoid overestimating the impact of the campaign ads, the research team only counted participants beyond the baseline level prior to each campaign.
- The six-month quit rate among people who received nicotine replacement therapy through the Smokers' Quitline was assumed to be 30% based on studies conducted by the New York State Department of Health.²
- Estimates for premature deaths averted per quit, discounted life years saved per quit (birthdays saved) and discounted quality-adjusted life years gained (years of good health gained) per quit were obtained from a published cost-effectiveness analysis of a similar national anti-smoking media campaign.³
- Estimates for the lifetime cost of smoking, including both private and external costs on a per-smoker basis, were obtained from a published return on investment (ROI) analysis of a youth smoking prevention campaign.⁴ The lifetime cost of smoking from the study was estimated for a potential smoker age 15.5 years and consisted of mortality cost, which does not vary based on the smoker's age, and all other costs, such as loss in earnings, which may vary based on the smoker's age. We modified this lifetime cost for the current analysis by performing the following: (1) dividing the lifetime variable costs of smoking by 50 (the difference between age 65 and 15) to derive the variable costs per year, (2) multiplying the variable costs of smoking per year by the difference between the smoker's age and 65 to obtain a revised lifetime variable cost of smoking and (3) summing the mortality cost and the revised lifetime variable cost to obtain a revised lifetime cost of smoking.
- Departmental costs included media development and placement, provision of nicotine replacement therapy and Department staff salaries. Operational costs for the statewide Smokers' Quitline were prorated for the number of NYC recipients served.

- The estimated number of successful quits from 2015 to 2019 was obtained by multiplying the number of NYC residents who received nicotine replacement therapy attributable to Health Department media campaigns by the 30% assumed quit rate.
 - Total premature deaths averted, discounted life years saved and discounted quality-adjusted life years gained from 2015 to 2019 were obtained by multiplying the estimated number of successful quits by those three health metrics on a per-quit basis.
 - The estimated costs per premature deaths averted, discounted life years saved and discounted quality-adjusted life years gained were obtained by dividing the total cost of the program by each of those three health metrics.
 - The total cost savings were obtained by multiplying the lifetime cost of smoking by the number of successful quits. The ROI was calculated as a ratio of the total cost savings over the total cost of the program.
- direction. In addition, we assumed that clients stayed smoke-free after six months; although relapse after this point is rare, it happens.
- Costs used in this analysis were from studies conducted outside of NYC in the early 2000s. Given NYC's high costs (including medical care and cigarette excise taxes), our savings estimates may be conservative.
 - The lifetime cost of smoking used for the analysis was modified from published estimates originally calculated for teenage smokers using simplifying assumptions; thus, it may be less precise.
 - We were unable to account for successful quits that may have been prompted by ad campaigns but were independent of Quitline services. As a result, our estimate of benefits may be conservative.
 - As the model parameters for this analysis were mostly based on two published studies, this analysis shares similar limitations documented in those two studies.

Limitations

- Quit rates used in this analysis were based on a sample of Smokers' Quitline participants reached for follow-up assessment; quit rates among those not reached for follow-up may differ, which could impact our assessment in either

References

1. Kilgore EA, Mandel-Ricci J, Johns M, et al. Making it harder to smoke and easier to quit: the effect of 10 years of tobacco control in New York City. *Am J Public Health*. 2014;104(6):e5-e8.
2. New York State Smokers' Quitline Annual Report. 2012. Accessed December 27, 2021. https://nysmokefree.com/Downloads/Reports/AnnualStateHighlights/2012_NYSSQLAnnualHighlights.pdf
3. Xu X, Alexander RL Jr, Simpson SA, et al. A cost-effectiveness analysis of the first federally funded antismoking campaign. *Am J Prev Med*. 2015;48(3):318-325.
4. MacMonegle AJ, Nonnemaker J, Duke JC, et al. Cost-effectiveness analysis of The Real Cost campaign's effect on smoking prevention. *Am J Prev Med*. 2018;55(3):319-325.