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HEALTH

Study Asks if Carrot or Stick Can Better Help Smokers Quit

By **SABRINA TAVERNISE** MAY 13, 2015

WASHINGTON — What would make a smoker more likely to quit, a big reward for succeeding or a little penalty for failing? That is what researchers wanted to know when they assigned a large group of CVS employees, their relatives and friends to different smoking cessation programs.

The answer offered a surprising insight into human behavior. Many more people agreed to sign up for the reward program, but once they were in it, only a small share actually quit smoking. A far smaller number agreed to risk the penalty, but those who did were twice as likely to quit.

The trial, which was described in *The New England Journal of Medicine* on Wednesday, was the largest yet to test whether offering people financial incentives could lead to better health. It used theories about human decision making that have been developed in psychology and economics departments over several decades and put them into practice with more than 2,500 people who either worked at CVS Caremark, the country's largest drugstore chain by sales, or were friends or relatives of those employees.

Researchers found that offering incentives was far more effective in getting people to stop smoking than the traditional approach of giving free smoking cessation help, such as counseling or nicotine replacement therapy like gum, medication or patches. But they also found that requiring a \$150 deposit that would be lost if the person failed to stay off cigarettes for six months nearly doubled the chances of success.

“Adding a bit of a stick was much better than a pure carrot,” said Dr. Scott Halpern, deputy director of the Center for Health Incentives and Behavioral Economics at the University of Pennsylvania School of Medicine, who led the study.

The finding is likely to get the attention of large companies as they sort out what types of benefits to offer employees in an era of rising health care costs. Most large employers, which bear much of those costs, now offer incentives for health-promoting behavior in the form of employee wellness programs, but until now, they have had little evidence of what types of programs actually work to guide them.

CVS, which helped conduct the study, is using the findings to design a smoking cessation incentive next month for its more than 200,000 employees.

“These large employers are spending an average of \$800 to \$900 per employee per year, but in ways that are often blind to normal human psychology,” Dr. Halpern said, adding that the spending on wellness had nearly doubled in five years.

The trial was intended to change that. Researchers randomly assigned the participants to a number of program options and let them decide whether they wanted to participate. About 14 percent of people assigned to the penalty program accepted it, compared with about 90 percent of people assigned to the reward program.

The penalty program required participants to deposit \$150; six months later, those who had quit smoking would get the deposit back, along with a \$650 reward. In the reward-only program, participants were simply offered an \$800 payment if they stayed off cigarettes for six months.

The success rate for those who joined the pure rewards group was low, about 17 percent, compared with more than 50 percent for the penalty program, though the figures had to be adjusted to account for the possibility that those who opted for the penalty might have been more motivated to quit to begin with.

Even after that adjustment, those who signed up for the penalty were nearly twice as likely to quit as those who opted for pure rewards, and five times as likely to quit as those who just got free counseling or nicotine replacement therapy. Even so, the largest overall effect was among the group that was assigned to pure rewards, simply because so many more people took part.

“This is an original set of findings,” said Cass R. Sunstein, a Harvard law professor who helped develop some influential ideas in the field of behavioral economics, notably that if the social environment can be changed — for example, by

posting simple warnings — people can be nudged into better behavior. “They could be applied to many health issues, like alcoholism, or whenever people face serious self-control problems.”

Professor Sunstein, who oversaw regulatory policy for the Obama administration from 2009 to 2012 and now directs the Program on Behavioral Economics and Public Policy at Harvard, wrote an opinion article on the study, but was not involved in it.

Over all, success eluded most of the study participants. More than 80 percent of smokers in the most popular pure rewards group were still smoking at the end of the study. Even so, researchers say, their success rate was far greater than for those who got the traditional treatment, signaling that there could be substantial public health benefits in offering financial incentives.

And even a small decline could have a big health effect. Smoking is the largest cause of preventable death in the United States. Diseases linked to it kill more than **480,000 Americans a year.**

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