

MANAGEMENT

How Firms Can Convince Employees to Quit Smoking

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Wellness programs are increasing in popularity as companies grow more determined to curb the soaring costs of providing health insurance for employees. To encourage healthy behaviors, firms are offering everything from free yoga classes to weight-loss support groups. While there have been some positive results from these programs, smoking cessation remains a particular challenge. But a recent study by two University of Pennsylvania experts found that cash can be a powerful incentive to help smokers quit. Kevin Volpp is the director of the Center for Health Incentives and Behavioral Economics at Penn's Leonard Davis institute as well a professor of health-care management at Wharton. Scott Halpern is a professor of medicine, epidemiology, medical ethics and health policy at the Perelman School of Medicine. He is also the founding director of the Palliative and Advanced Illness Research Center at Penn. Their paper is titled, "A Pragmatic Trial of E-Cigarettes, Incentives, and Drugs for Smoking Cessation." Volpp and

Halpern recently joined the Knowledge@Wharton radio show on SiriusXM to talk about what their research means for companies looking to up the ante on smoking and other detrimental health habits.

Knowledge@Wharton: Why did you want to pursue this line of research?

Kevin Volpp: We had done two major previous studies: One was among employees at General Electric nationally, and the other was among CVS employees nationally. We established that financial incentives can triple smoking cessation rates compared with usual quit rates. This led to benefit-design changes among all employees at GE and CVS, and the research further highlighted some intriguing possible next steps.

In the CVS study, we found that employees who are given the chance to put some of their own money at risk — which they would lose if they were not successful in quitting smoking — did phenomenally well. This is with a generous match as part of participating in the study of roughly 4-to-1. We found that 52% of those participants quit [smoking].

But one of the challenges with these types of approaches, which leverage a couple of behavioral economic concepts, is the notion of precommitment. There are times when people are much more willing to focus on their future well-being. Sometimes you can take advantage of that — like somebody joins a study and says, “I’d really like to quit smoking, so I’ll put some of my own money at risk.” The other challenge is the notion of loss aversion, which is very well established in behavioral economics. If we can shift the framing so that people lose money for not doing something, as opposed to gain money if they do something, that can be much more effective. But the challenge is that most people aren’t willing to do it. So, we only had 14% of people sign up to do that.

That was one of the big challenges we were trying to solve in this new study. The other was that both the GE and the CVS studies were done among willing participants. People had to opt in. There was a very clean measurement of effectiveness among willing participants, but not in terms of effectiveness in a broader employee population.

Scott Halpern: There are a variety of innovations in this particular study because all we were doing before was offering people an opportunity or a series of opportunities to improve their health. There were very few risks with this study, so we were able to use an opt-out consent mechanism. Fewer than 2% of employees at 54 different companies around the United States chose to opt out when they were contacted. That enabled us to enroll a much larger, much more broadly representative sample of smokers around the country than prior studies had been able to do. We wound up with 6,000 people who were smoking at the time of enrollment.

Knowledge@Wharton: What do you attribute to the low opt-out rate?

“There are times when people are much more willing to focus on their future well-being.”

–Kevin Volpp

Halpern: I think part of it was the mechanisms by which they were contacted. There was a series of email notifications and some text messaging. People were made aware that these were programs that were going to be offered to them, even in the context of the trial. Among those who participated, [not] everyone had to use the intervention to which they were assigned. In fact, only about 20% of people across the five different arms of the study chose to engage with the platform that the research was conducted through and use their assigned intervention.

What were those interventions? We had a usual care arm, where we just told people that there were benefits to smoking cessation. We gave them standard brochures and offered them an opportunity to sign up for a motivational text-messaging program. The other arms were all built on that. In one case, they added free nicotine replacement therapy and the two FDA-approved pharmacotherapies for smoking cessation. The next arm offered free e-cigarettes.

The final two arms were where the incentives came in. Both offered bundles of incentives worth up to \$600 if you maintained biochemically confirmed abstinence for up to six months. They were offered in two ways, in addition to the free nicotine replacement therapy and FDA-approved meds. One was offered as a pure carrot, and the other was offered as what we like to call a virtual stick. It was virtual in the sense that, in contrast to the CVS study, people didn't have to put down any of their own money. We prefunded an account in their name, making them feel that the money was theirs to be lost if they didn't achieve their smoking cessation milestones.

Knowledge@Wharton: How big a role did the financial component play in people taking the next step in the process?

Volpp: There's a natural tendency most humans have to procrastinate, particularly with an activity like smoking cessation, which is very difficult to do. It's always much easier to plan to quit next week. What these incentive-type programs sometimes do is they make more salient the future benefits to quitting, and they also give you some added inducement to try to take those difficult steps now.

Knowledge@Wharton: This study involved 54 companies. What are the practical implications of this research for them and other companies that want to offer such programs?

Halpern: These companies represented all 11 major sectors of the economy and were of various sizes across the spectrum. So, I think it's potentially a very substantial impact both for what we showed did work and for what we showed didn't work very well. As part of their wellness offerings, most companies now are offering free nicotine replacement therapies and perhaps other pharmacotherapies for their employees who smoke. We showed that doesn't work among all employees who smoke. Again, that was the key innovation of this study by enrolling all smokers. Of course, if you're an employer, you're interested in getting all of your smoking employees to quit, not just those who are motivated. And it turns out if you offer free nicotine replacement therapy or free e-cigarettes, that doesn't help. It merely adds to your cost without saving you long-term costs by getting employees to improve their health.

By contrast, an early investment in incentivizing cessation actually does triple cessation rates, similar to in the prior CVS and GE studies that Kevin mentioned. But here we see that tripling effect is maintained both among all employees and in the background, where everyone is getting offered free nicotine replacement therapy. I think those are two key findings that employers can now use in redesigning their wellness offers.

Knowledge@Wharton: How did you ensure that the participants quit? What was the length of time for the testing?

Halpern: The testing in our study had to be fairly rigorous to meet typical scientific criteria, perhaps more rigorous than an employer would choose to implement as it rolled out the program. We required that people provide urine or blood samples to confirm chemically that they had no metabolites of nicotine from combustible cigarettes in their system at one month, three months and six months after the date at which they were supposed to quit. If you're an employer, that's a fairly onerous process to foist on your employees. Presumably, what most employers would choose to do is some scaled-back version of that. I think it would probably be important to have at least one biochemical confirmation, but probably three would be overkill for scalable use in a large employee population.

“If you can get even a small proportion of people to quit, then you’re talking about long-term cost savings of a sizeable magnitude.”

–Scott Halpern

Volpp: One of the other really interesting findings in this study is we found the cost per quitter was lower with incentives than it was with either pharmacologic therapy or e-cigarettes. The logic behind that is pretty simple. The incentives are only paid if people are successful in quitting smoking, whereas many people are put on pharmacologic therapy and do not succeed. The employer bears the full cost of that but doesn’t necessarily derive any benefit. As Scott said, one of the interesting elements here is we find that the most commonly taken approach to employee wellness in the context of smoking cessation is to offer free pharmacologic therapy, and simply offering that doesn’t actually have a lot of effect because most people don’t do anything.

One of the other novel aspects to the study, which is probably part of why this was published in *The New England Journal of Medicine*, is that the quit rates we published are much lower than has commonly been shown. Typically, what is shown is a pharmaceutical company will do a trial of a drug. They will carefully monitor to make sure everybody in that trial does everything they’re supposed to, exactly like the protocol, and it’s a really clean test of efficacy of taking the drug as prescribed. But in reality, what many people do in real-world settings doesn’t really reflect that. What we do is look at offering these pharmacologic aids and then the effectiveness in practice. When you take out both the fact that most people don’t do anything, and then probably many people in practice don’t exactly follow the prescribed regimen, the effectiveness is much lower.

Knowledge@Wharton: The offer itself is an incentive for people to volunteer rather than be forced to participate in a wellness program, correct?

Volpp: Yes, I think the incentive serves a very powerful signaling device to people that this is something that your employer values enough that they’re going to offer you a financial inducement to do this. It’s up to you whether you want to do it, so you can think about this as a nudge where we’re trying to push people with moderately strong incentives. But it’s really up to the employee as to whether they want to do it.

As I mentioned, the quit rates are much lower than was commonly shown in the literature. Among those who are willing participants who engage with the system, we see a maximal quit rate of about 12.5%. That's much, much higher — roughly triple of what we see in other groups like the e-cigarette group and the pharmacologic therapy group — but it's still far less than 100%. So, there's tremendous proof here of promise with all of these approaches, but there's still a lot of room for improvement.

Knowledge@Wharton: What is driving the popularity of these programs right now? Do they really help companies save money on health care costs?

Halpern: The data on how much extra it costs an employer to employ a smoker versus a nonsmoker are a little bit all over the map. At the very least, we're talking about a few extra thousand dollars per year to employ a smoker versus a nonsmoker. If you can get even a small proportion of people to quit, then you're talking about long-term cost savings of a sizeable magnitude. It suggests a fair bit of wiggle room for further innovation. We used \$600 incentives in this study, and that achieved fairly sizeable but still modest results. If you're talking about several thousand dollars a year of cost savings, there's obviously ample room to ratchet up that \$600 tag and perhaps achieve better results still.

“[Study] after study, we find tripling of smoking cessation rates when someone else is contributing money and saying, ‘Here’s a lump sum right now to help you prioritize doing this today.’”

–Kevin Volpp

Volpp: We should have acknowledged at the outset that the study was funded by the Vitality Institute, which is a health and wellness incentive company that works with a lot of employers. In this case, we had 54 employers participating. The \$600 was arrived at based on their sense of, “Here’s what we think employers would be willing to pay in terms of incentives.” As Scott says, the true economic benefit is much higher. It’s possible that as data like this comes out, those differentials between what employers are willing to offer as carrots or provide as sticks might grow further.

Knowledge@Wharton: How can employee participation in retirement programs such as 401(k)s influence how companies structure wellness programs?

Halpern: The two paradigms of the difficulty of stopping smoking now for future well-being is totally parallel to the feeling of making a sacrifice right now to contribute to your 401k to have that nest egg in the future. That's why employers have an important role to play. Whether it be through the use of incentives or other nudges, like in the 401k sector, they've shown that just defaulting people to contribute is highly effective. They really do have a role to play in improving overall well-being among large populations of people.

Volpp: There are some interesting similarities when we think about rationality and what we might expect people to do. Certainly, in the retirement savings example, given the importance of retirement and the ability to save money pre-taxed, particularly with an employer match, it's very clear that everybody should be doing this. But study after study has shown that when default savings rates are set at 0, most people pick 0. When they're 3%, most people pick 3%. There are literally \$100 bills left on the sidewalk. I think we can draw an interesting parallel here with what's happening with smoking. The average smoker who smokes a pack a day of cigarettes would save several thousand dollars a year if they just quit on their own. When you factor that in, there's no way that a \$600 incentive should have any impact in this population. Yet study after study, we find tripling of smoking cessation rates when someone else is contributing money and saying, "Here's a lump sum right now to help you prioritize doing this today."

Knowledge@Wharton: What's the next step in this research?

Halpern: We didn't talk much about the e-cigarettes, but it's worth pointing out that our finding that e-cigarettes didn't promote smoking cessation is very important in light of the ongoing dialogue about the public health pros and cons of e-cigarettes. That's a finding that needs to be replicated because it has major public health impacts, and it probably ought to be replicated with different types of e-cigarettes. So, that's one important next step.

Another is finding that threshold at which you're optimizing with incentives the proportion of people that you can get to quit while still maintaining those cost savings for the employer. It's probably considerably higher than the \$600 we tested in this study.