Could financial incentives be used to slow the diabetes epidemic?

In this section, a panel of multidisciplinary team members give their opinions on a recently published diabetes paper. In this issue, the panel explores the findings of a study examining whether financial incentives increased the rate of smoking cessation, and offer their opinions on whether this method could be successful in encouraging obese people to lose weight.

Daniel K Sokol is a Lecturer in Medical Ethics and Law at St George's, University of London and Director of Applied Clinical Ethics (ACE) at Imperial College London.

Being obese is doubly unpleasant. In addition to a host of associated health risks, it is a stigmatised condition. While it is possible to hate the sin and not the sinner, in actuality many people look down on obese individuals as weak-willed, intemperate gluttons. "If only they ate less," the thought goes, "they wouldn't be so monstrously fat". This view ignores the genetic, biological, societal and environmental factors predisposing to obesity.

One risk is that financial incentives to tackle obesity, especially in the workplace, will maintain or aggravate the stigma surrounding the condition, and reinforce the reductionist view of obesity. Another danger is that such incentives can cause much distress to those who, despite their best efforts, "fail" in their incentivised mission to lose weight. This sense of failure may be more acute if they are surrounded by others who have "succeeded". Is the benefit to those who succeed significant enough to justify harming the few that fail?

Another issue concerns the efficacy of the intervention. This is an empirical matter. Does a financial incentive for obesity actually work? Taking into account those who fail; those whose ill-chosen diets are dangerous; those who injure themselves by overzealous exercising; those who lose weight only to put it all back in an instant. Will the intervention cause more good than harm overall? The smoking study by Volpp et al (summarised alongside) was conducted on financially comfortable, mostly white participants. Would the results have been different with different demographics? And if participants are poor, can their consent to participate be adequately voluntary if the incentive is several hundred pounds?

Finally, why stop at obesity? For the sake of consistency, why not have financial incentives for a whole range of health-affecting, socially disapproved conditions? I feel uneasy at the thought of such a judgemental and interfering approach. My own view is that we should look for less empirically questionable and morally dubious ways to encourage obese people to lose weight.

David Haslam is a GP with a special interest in obesity and cardiometabolic disease, Hertfordshire, and Clinical Director of the National Obesity Forum.

There is something deeply unnerving about paying obese people to lose weight. It will induce righteous indignation on a previously unimaginable scale among financially strapped thin individuals who will be affronted at the perceived betrayal of natural justice in rewarding fat people. Shouldn't the thin be paid instead?

On the other hand, the usual tried and tested weight-loss regimens do not work, otherwise we would not have an obesity epidemic, so surely a new and innovative scheme should be welcomed. Often, the element that stands in the way of effective weight loss is the lack of motivation. How clever, then, to create an artificial cash-based motivational factor to kick-start a weight loss programme, for the benefit of a person's health.

The only way to know whether incentivising weight loss works or not, is to study the evidence. If financial dividends do work in inducing long-term weight loss and improvements in health, then they should be warmly embraced. However, "long-term" does not just mean 6 months, because just about anything in the weight-loss world works for 6 months.

Although money will provide a motivating factor to lose weight, it may prove to be the wrong factor. Maintaining weight after the money has been spent will require a whole different motivation, and if such a genuine factor was missing initially, then cash will be seen to have been a poor substitute. With regular payments, will yo-yo dieting become a realistic career opportunity for entrepreneurial obese individuals?

Weight loss programmes, such as Counterweight, have robust long-term evidence for inducing weight loss across a population in primary care in the wild, and have been shown to be cost-dominant (Counterweight Project Team, 2008a; b). Until these methods have been comprehensively introduced by PCTs, why should we experiment with controversial unproven schemes?

Counterweight Project Team (2008a) Evaluation of the Counterweight Programme for obesity management in primary care: a starting point for continuous improvement. *Br J Gen Pract* **58**: 548–54

Counterweight Project Team (2008b) Influence of body mass index on prescribing cost savings of a weight management programme in primary care. *J Health Serv Res Policy* **13**: 158–66

A randomized, controlled trial of financial incentives for smoking cessation.

Volpp KG, Troxel AB, Pauly MV et al (2008) *N Engl J Med* **360**: 699–709

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It pays to stop smoking

1 The authors of this study aimed to evaluate whether a financial incentive would encourage people to quit smoking.

2 Participants were identified from the results of a survey questioning employees at one large company's work sites throughout the US about their smoking habits, from February 2005 until November 2006.

3 Employees were included if they were 18 years of age or older, and if they reported that they smoked more than five cigarettes per day.

4 A total of 878 people were randomised into two groups. One group (442) received information about smoking cessation programmes, and the other group (436) received the same information plus financial incentives.

5 Financial incentives involved a payment of $100 for completion of a smoking cessation programme, an additional $250 if smoking

cessation continued for 6 months after study enrolment, and $400 more if participants had continued not to smoke for a further 6 months after the initial cessation. The overall incentive was, therefore, up to $750.

6 Saliva and urine samples were tested for cotinine to verify smoking cessation.

7 Participants were followed for at least 12 months. They were all contacted at 3 months. If participants reported not smoking in the preceding 7 days, they were invited for a full assessment and interviewed again 6 months later. If participants reported smoking, they were followed up again 3 months later for the full assessment and interviewed 6 months later.

8 The primary endpoint was smoking cessation for 9 or 12 months after enrolment, depending on whether participants initially reported cessation at 3 or 6 months.

9 Secondary endpoints comprised rates of participation in, and completion of, smoking cessation programmes and smoking cessation within the first 6 months after enrolment.

10 Significantly higher rates of smoking cessation were reported in the incentivised group than in the information-only group after 9 or 12 months (14.7% vs. 5.0%; $P<0.001$) and after 15 or 18 months (9.4% vs. 3.6%; $P<0.001$).

11 The rate of enrolment to the smoking cessation programme was significantly higher in the incentivised group (15.4% vs. 5.4%, $P<0.001$), as was the completion of the smoking cessation programme (10.8% vs. 2.5%; $P<0.001$), and smoking cessation within the first 6 months after enrolment (20.9% vs. 11.8%, $P<0.001$).

12 Financial incentives did increase the rate of smoking cessation in this study of employees from one large company.

Simon Page is a Consultant Physician at Nottingham University Hospitals, Nottingham

Obesity is a growing problem. In 2007, 24% of adults were classified as obese (BMI >30 kg/m^2), up from 15% in 1993 (The NHS Information Centre, 2009). Waist:hip ratios also increased significantly with 33% of females and 41% of males having measurements over 102 and 88 cm respectively. These changes are closely related to the growing epidemic of type 2 diabetes.

Obesity prevention is a lifestyle issue but the mantra "eating a little less and doing a little more" is challenging for many people. Volpp and colleagues demonstrated that financial incentives can help people to stop smoking. Could such an approach work in obesity prevention? Pharmacological obesity management is already costly. In 2007, 1.23 million prescriptions for obesity-related items cost the NHS over £50 million (The NHS Information Centre, 2009). Could this money be used differently to, put simply, pay people to lose weight?

Initial studies are not encouraging. A recent meta-analysis of nine weight-loss trials with at least 1 year follow-up showed no improvement from the use of incentives at 12 and 18 months (Paul-Ebhohimhen and Avenell, 2008).

It is difficult to extrapolate from the Volpp report to obesity management since individuals cannot stop eating. Longer-term behavioural change is needed to achieve sustainable weight loss. Many issues are raised by this approach: how large do incentives need to be (larger incentives may be more effective)? When should they be paid (early, progressive or late rewards)? What weight loss targets would achieve "value for money"? Should incentives be re-paid in the event of relapse? Could financial incentives offer a perverse motivation to individuals who are just below the entry weight to gain weight in order to qualify?!

Effective strategies for obesity prevention could have major public health benefits and new approaches, however controversial, deserve careful consideration. Well designed trials comparing financial incentives with pharmacological and behavioural approaches are needed before interventions with the potential to drain the NHS of substantial resources are widely implemented.

The NHS Information Centre (2009) *Statistics on obesity, physical activity and diet: England, February 2009.* Available at http://tiny.cc/F2WvA (accessed 14.05.09)

Paul-Ebhohimhen V, Avenell A (2008) Systematic review of the use if financial incentives in treatments of obesity and overweight. *Obesity Reviews* **9**: 355–67

Francesca Arundel is a Lead Diabetes Nurse, Chichester

In the trial summarised alongside, Volpp et al demonstrated that offering financial incentives to people to stop smoking increased the likelihood of cessation by just under three times. Is this a successful health strategy or immoral bribery? Is this a strategy that can be used in other areas of health promotion?

A "back of a matchbox" calculation suggests that over $43 000 was spent on the participating study group in incentives, with 41 people from the intervention group achieving smoking cessation at 15 months compared with 16 people in the non-incentive arm. If this was applied to a real-world situation, 16 people stopped smoking without incentives, so the money only helped a further 25 people to quit. This does not include the cost of the provision of the education groups and healthcare professionals to run them. Is this a cost-effective solution? I think this is a question for a health economist.

Other concerns about this health initiative might include whether this could encourage the uptake of smoking in the unscrupulous few who might wish to exploit the system. A previous study by Volpp et al (2006) showed long-term abstinence rates to be non-significant if financial incentives stopped 1 month after cessation. So the question is: how much reward will be effective, and for how long?

Lord Darzi has endorsed the concept of giving people money to plan their own expenditure in health care for long-term conditions with "personal health budgets". Exercise on prescription has been around for years and is, in effect, a financial reward scheme. Locally, a proposal has been considered for overweight people to be reimbursed on completion of a commercial weight management programme. So perhaps the next step would be to incentivise the actual weight loss; I can see the slogan "Pounds for pounds"!

The health benefits for weight loss as for smoking cessation are significant, and if incentive schemes can be shown by health economists to be cost-effective in the long-term then this controversial step might be made palatable to the general public when compared with the financial consequences of doing nothing.

It seems that now would not be the best time to roll out this type of initiative. With the country reeling under the furore caused by huge financial bonuses paid to underachieving bankers, and MPs claiming expenses (which in some cases are tantamount to profiteering from the public purse), this would probably be a step too far!

Volpp KG, Gurmankin Levy A, Asch DA, et al (2006) A randomized controlled trial of financial incentives for smoking cessation. *Cancer Epidemiol Biomarkers Prev* **15**: 12–18