As poor countries develop, non-communicable diseases (NCDs) such as diabetes are becoming more common. Offering rewards for lifestyle changes that help manage diabetes can improve healthy behavior, but these incentive programs can be costly. Researchers will evaluate the impact of incentivizing and monitoring healthy behaviors on the management of diabetes.

**Policy Issue:** As poor countries develop, non-communicable diseases (NCDs) such as diabetes are becoming more common. NCD burdens—or the impact of the disease as measured by the loss of quality and length of life—are greatest in urban areas, where a sedentary lifestyle and easy availability of high-calorie foods increase the risk factors for and prevalence of diabetes. Lifestyle changes such as increased physical activity and dietary modifications can prevent the disease and help the diagnosed avert serious long-term complications such as amputations, heart disease, kidney disease, and stroke. Offering rewards can encourage individuals to adopt healthy behaviors, but these incentive programs can be costly. Little evidence exists on how incentives should be designed to work effectively while maintaining low costs.

**Context of the Evaluation:** In India, more than 60 million individuals have been diagnosed with diabetes, and the number is expected to surpass 100 million by 2025.¹ The immense costs of diabetes in India fall largely on the public health system, which in 2010 spent an estimated US$38 billion (2 percent of GDP) on treating the disease.²

In urban Tamil Nadu, roughly 14 percent of the population has diabetes.³ In an attempt to minimize the costs of care for diabetics, the government of Tamil Nadu scaled up a program to combat diabetes by providing access to free diagnostics, subsidized medicine, and lifestyle modification counselling in 2008. However, despite a large public health
literature suggesting that lifestyle modification, and in particular regular exercise, is one of the most cost-effective strategies for managing diabetes, anecdotal evidence from physicians suggests that few have altered their lifestyles through the existing program.

**Details of the Intervention:** Researchers will evaluate the impact of behavioral incentivizing and monitoring on patients' ability to prevent and manage diabetes through lifestyle modification. Researchers will randomly assign 2,000 diabetics and pre-diabetics to one of two treatment groups or a comparison group:

- **Monitoring Group:** Individuals in the Monitoring Group will receive a pedometer, with which they will self-monitor the number of steps they take each day—an indicator of healthy behavior. They will be encouraged to report their steps through an automated mobile-phone-based reporting system.
- **Monitoring + Incentives Group:** As in the Monitoring Group, individuals will receive a pedometer to monitor their daily steps. These individuals will also be rewarded with cell phone minutes for achieving step target. Within this group, researchers will randomly assign individuals to receive rewards on a daily, weekly, or six-week basis. Among individuals assigned to the weekly reward schedule, some will need to reach their step target on a minimum number of days to receive any cell phone minutes. For the other half of individuals rewarded weekly— as well as all those rewarded daily and on a four-week basis—their reward amount will be based simply on the total number of days on which they reach their step target.
- **Comparison Group:** Individuals will not receive pedometers to monitor their steps, nor will they receive incentives for their behavior.
- **SMS Information Group:** Researchers will also randomly assign one-tenth of individuals in each treatment group into the SMS Information Group. In addition to their primary program assignment, these individuals will receive informational text messages to motivate lifestyle modification for diabetes management, including changes to diet and exercise.

To measure the impact of monitoring and incentives on diabetes management, researchers will collect HbA1c levels, a measure of blood sugar control. Additionally, researchers will measure fitness levels, weight, and disease complications, and they will ask individuals to report exercise, diet, medication adherence, and medical care. The pedometers will provide detailed daily exercise data for all individuals not in the Comparison Group. This will allow the researchers to understand the impacts of the incentive payment frequencies, and the minimum performance threshold for payment, on exercise behavior and program cost.

**Results and Policy Lessons:** Study ongoing; results forthcoming.


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