Pay for Perfomance Incentives for Heathcare Workers in Pakistan

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Sector(s): Health, Political Economy and Governance

Fieldwork: Evidence for Policy Design (EPoD), Centre for Economic Research in Pakistan

Location: Pakistan

Sample: 349 Lady Health Workers (LHWs)

Target group: Health care providers

Outcome of interest: Immunization Service provider performance

Intervention type: Monetary incentives Performance-based pay

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Research Papers: Using Preference Estimates to Customize Incentives: An Application to Polio Vac...

Partner organization(s): Punjab Department of Health, International Growth Center (IGC), UK International Development, Building Capacity to use Research Evidence (BCURE)

Polio is endemic in Pakistan, and vaccination campaigns often suffer when government health workers hired to administer the vaccine underperform. Researchers introduced individualized bonus contracts to health workers to evaluate the impact of time preferences on vaccine delivery and quality of service. Relative to those with random contracts, vaccinators with tailored contracts provided significantly smoother service.

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Government workers are critical for high-quality service delivery in health, education, and other program areas. These workers have individual preferences that affect their decisions and the quality of their work. As one example, workers may differ in their tendency to procrastinate (i.e., doing less work today because they believe they can make it up tomorrow). By tailoring contracts and incentives to individual workers' preferences, policymakers may be able to improve service delivery.

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Polio is endemic in Pakistan. Of 350 new worldwide cases in 2014, 297 occurred in Pakistan, constituting a "global public health emergency" according to the World Health Organization. The situation improved in 2015, partly because of a large response by the government. The disease largely affects children under five years of age.

In Lahore, Pakistan, the Department of Health runs organized vaccination drives to combat the epidemic. The drives typically last two or more days and are conducted approximately every month. During vaccination drives, Lady Health Workers (LHWs), government health workers who work on polio eradication efforts, receive a supply of oral vaccine and a neighborhood map and then travel door-to-door vaccinating children. LHWs have a suggested target for the number of vaccinations they should perform during the drive. Prior to the evaluation, LHWs self-reported their performance, and they rarely reported falling short of the suggested targets. However, it is likely that that LHWs often over-reported the number of vaccinations administered.

A health worker administers polio vaccine drops to a child in Pakistan

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Researchers conducted a two-phase randomized evaluation to evaluate the impact of individualized bonus contracts on the consistency of LHWs' performance across a two-day vaccination drive. The first phase measured LHWs' time preferences and patience based on how they allocated vaccinations over time, and the second phase tested the impact of bonus contracts customized to an individual's level of patience.

Vaccination drives typically take place over two days, which means that LHWs must decide how many vaccinations to complete each day to meet their overall target. In the first phase of the evaluation, LHWs were asked to set targets for the number of vaccinations they would complete in each day of the drive. If they reached their target on both days, they would receive a fixed bonus of 1000 rupees (around US$10), on top of the fixed daily wage of 100 rupees (US$1). Before making this decision, LHWs were informed of a randomly assigned "interest rate" ranging from 0.9 to 1.25. For each vaccination allocated to day two, the number of vaccinations required on day one was reduced by the interest rate. A higher interest rate made it more attractive to

allocate more vaccines to the second day.. In addition, researchers randomized whether LHWs made their daily allocations at the end of the training session or on the first day of the vaccine drive.

Researchers used LHWs' chosen daily targets to estimate preference parameters for each LHW and used these results to design individually tailored bonus contracts for the second phase of the evaluation.

In the second phase of the evaluation, half of the LHWs received tailored bonus contracts which used their individual time preferences, as measured in the first phase, to determine the interest rate between vaccinations for each day. These contracts were meant to encourage LHWs to allocate equal vaccinations to each day ensuring a smooth provision of service. The other half of LHWs were given bonus contracts with a randomly determined interest rate. In both groups, LHWs made their daily target allocations at the same time as they had in the first phase (either at training or the first day of the evaluation). This phase allowed researchers to investigate the effect of tailoring bonus contracts on performance.

As both phases of the study relied on being able to monitor LHWs' performance, researchers collaborated with the Department of Health to design a smartphone-based monitoring system to track the door-to door activities of polio vaccinators. Each LHW received a smartphone equipped with the application, which they used to enter information related to each vaccination attempt. Senior health administratorss had access to the information in real time which allowed them to observe vaccination attempts and LHW performance. Before the first vaccination drive, all LHWs attended two-hour training sessions where they learned how to operate the smartphone application and submit vaccinations to the tracker. Additionally, they learned about the bonus contracts and how to submit their chosen allocation of vaccinations between each day of the drive.

Three hundred and forty-nine LHWs participated in the first phase of the evaluation, which took place in November 2014. Three-hundred thirty-eight of the vaccinators in drive one submitted the information necessary to estimate their preferences, and, of these, 337 participated in the second phase, in December.

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Relative to those with random contracts, LHWs with contracts tailored to their individual time preferences provide significantly smoother service. These LHWs allocated their daily targets a third more evenly between days than LHWs with contracts with randomly assigned interest rates.

Furthermore, vaccinators exhibited present bias—in this case, a tendency to view work today as more burdensome than work tomorrow—in their work allocation decisions. LHWs who allocated their vaccination targets on the first day of the vaccination drive tended to procrastinate by allocating fewer vaccinations to the first day than those making the choice in advance. While LHWs were generally present-biased in their allocation decisions, the level of bias varied widely, highlighting the potential for other policy interventions tailored to individual preferences.

By considering these preferences in pay incentives, contracts which take into account individual preferences may provide an avenue for policymakers to improve service delivery. Beyond the standard policy levers of monitoring workers and offering pay bonuses, the results of this evaluation indicate that it is possible to measure time preferences for incentives and then use these preferences to design contracts that improve the provision of public services.