



Fighting Poverty: What Works?

SUMMER 2009



Showing Up is the First Step

Addressing Provider Absence in Education and Health

Y

ou can build schools and clinics and stock them with books, drugs, and equipment, but if the teachers, nurses, and other providers are chronically absent, these investments will be wasted. A range of studies have examined alternative ways to reform health and education systems and address what is perhaps the most important failure in these systems. No simple answer emerges but some general lessons do stand out.

Absenteeism of teachers, doctors, and other service providers in developing countries is widespread and unpredictable. On an average day, 27 percent of teachers in Uganda do not come to class. Primary health centers in Indonesia and India experience 40 percent absence rates.

Supervisor discretion undermines attempts to incentivize teachers and nurses. Widespread absenteeism suggests supervisors are already unable or unwilling to combat absenteeism. Under incentive programs in health and education, in India and Kenya, supervisors paid providers whether they showed up or not.

Attempts to increase accountability to the poor had mixed effects on absence; some methods worked in some places, while similar methods failed in others. In all cases, however, existing government policies designed to make providers accountable were not working at the start of the study.

What worked best were impersonal, direct incentives for attendance. Seva Mandir, an NGO in Rajasthan, India, introduced a simple mechanism that recorded teacher attendance and directly determined teacher pay. This combination of external monitoring with credible rewards (and punishments) cut absence rates in half. Moreover, providing incentives for service provider attendance improves outcomes for poor people without undermining providers' intrinsic motivation.

The institutions that deliver public services are complex and the details matter. This briefcase, drawing on and extending Banerjee and Duflo (2006), summarizes a range of studies by researchers in the J-PAL network, compares the cost effectiveness of alternative strategies for improving this most basic element of public services, and draws some general conclusions.

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Gone but not Forgotten

On an average day, 27 percent of teachers in Uganda and 40 percent of primary health care workers in India are not at work. This exceeds by far both those of their counterparts in developed countries and other workers in developing countries. In comparison, 5 percent of teachers are absent in New York State.

A RECENT SURVEY by Chaudhury, et al. (2006) made almost 70,000 surprise visits to primary schools and clinics across six poor countries in three continents. It found teachers were absent 19 percent of the time on average, and documented 35 percent absence rates for health care providers (see figure 1). In a district by district assessment, Pratham, an NGO focusing on primary education, found 23 percent absence rates among teachers throughout India (ASER, 2005).

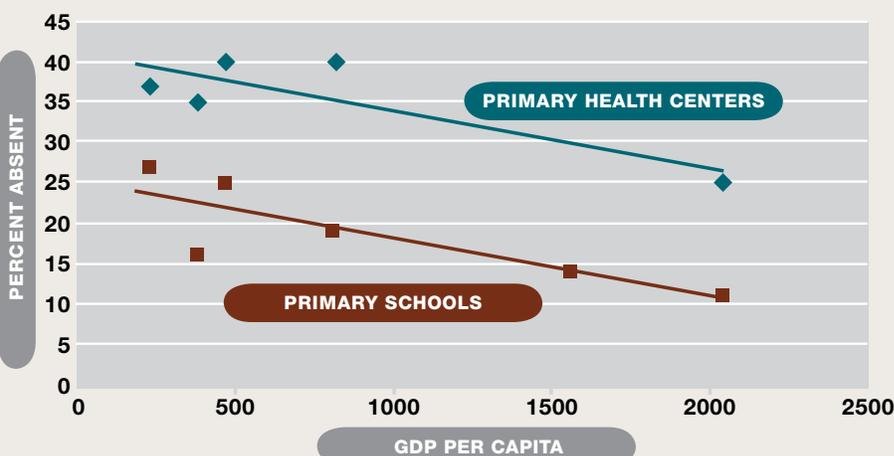
In general, poorer countries have higher absence rates. On an average day, 27 percent of teachers are not at work in Uganda, compared to 5 percent of teachers absent in New York State.

Absences are generally not concentrated among a few “ghost workers;” they are widespread. Nor

are absences predictable and easy to plan around. They are as likely on Wednesday as on Friday (Banerjee, et al., 2004). Worse still, even teachers who are at school might not be in class; in India, only two-thirds of teachers present in school were actually teaching (Kremer, et al., 2004).

Few service providers face a serious threat of being fired for excessive absences. In a survey of 3,000 Indian government schools, only one head teacher reported a teacher being fired for poor attendance. Even among private schools—where teachers are less protected and schools have financial incentives to provide better service—only 35 of 600 schools reported a teacher being fired for poor attendance. Overall, absence rates were similar in government and private schools.

FIGURE 1 Absenteeism in Health and Education



Chaudhury et al. (2006) conducted surprise visits at school and primary health care facilities in India, Indonesia, Bangladesh, Uganda, Peru and Ecuador. They found absence rates to be negatively correlated with income: Doubling a country's GDP is associated with an 8.0 percentage-point absence decline in education. This correlation is weaker for health care where a doubling in national GDP is associated with only a 3.8 percentage point decline in health worker absence. Similar results have been found across poorer and richer states in India.

Does Absence Matter?

DOES IT MATTER that a third of the poor's service providers are absent on any given day? Can the poor just work around it? A range of evidence indicates that it matters a great deal.

If a teacher is absent, children will automatically lose days at school. Thus for adolescent girls enrolled in school in rural Bangladesh, the most common reason for missing school in the last week was teacher absenteeism (Field and Glennerster, 2008). When Seva Mandir successfully reduced absenteeism in its informal schools (see below) children received more days of learning—although the increased reliability of the teacher did not encourage children to reduce their own absenteeism.

Health may be different from education; if a nurse is not there one day a patient may simply come back the next and get treated. In the case of vaccinations, patients may not be that much worse off for waiting a day. On the other hand, most people have to travel much further to a clinic than a school. If there is a high probability that the clinic will be closed, patients may not even bother trying in the first place. There is mixed evidence on whether reducing absenteeism leads to patients relying more on public health clinics. A temporary reduction in nurse absen-



teeism at clinics in India did not lead to more patients attending these clinics (Banerjee, et al., 2008). However, utilization increased in Uganda when absenteeism fell and services improved, although it is impossible to distinguish the effect of reduced absenteeism from other improvements (Bjorkman and Svensson, 2007).

Most importantly, the most successful program for reducing teacher absenteeism significantly improved learning. In a program that increased teacher attendance from 58 to 79 percent, 7 percentage points more girls were able to write (Duflo, Hanna, and Ryan, 2008).



Trial, Error ... and Success

MANY innovative programs aim to promote attendance, often by trying either improved incentives or monitoring. But who should monitor and who should be in charge of giving rewards for attendance?

And to what should incentives be tied? Final outcomes, such as student learning or community health, or simply attendance itself? Should students be rewarded for performance, in the hopes that their families will pressure teachers to hold class?

Because these are practical questions, they need to be tested on the ground. A series of programs run by different agencies and tested through randomized evaluations have sought to answer them by testing the effectiveness of

- impersonal monitoring with automatic incentives;
- monitoring by supervisors who distribute rewards and can make allowances for special circumstances;
- incentives tied to outcomes;
- community mobilization and information; and
- supplementing civil service teachers with locally accountable contract teachers.

The results indicate that the details of monitoring and providing incentives matter, sometimes in surprising ways. You can compare results in the cost-benefit graphs in figures 2a and 2b: each project is numbered ① - ⑩ according to its order in the chart, with **brown ink for teachers** and **turquoise ink for health care providers**.

FIGURE 2 | **IMPACT ON ABSENCE:**
decline in absence rates (percentage points)

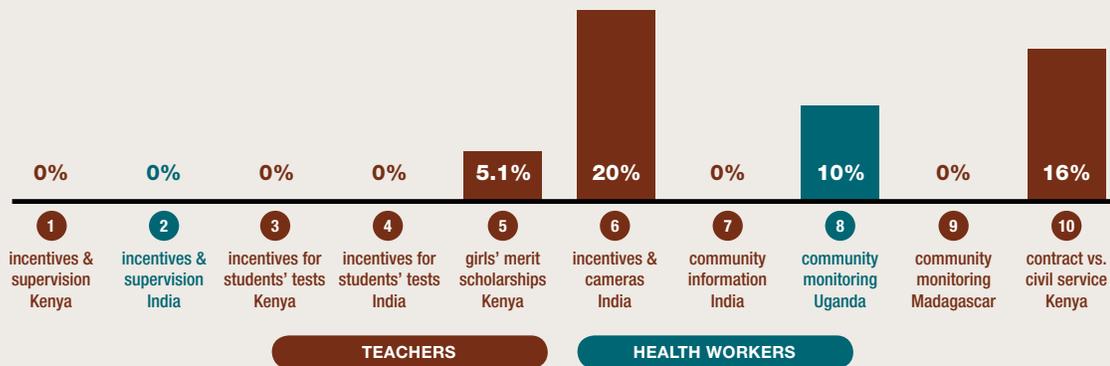
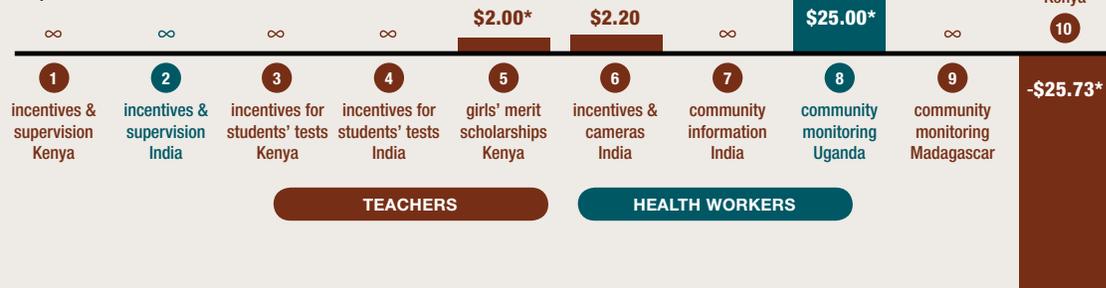


FIGURE 3

COST EFFECTIVENESS: cost per additional day of teacher or health worker presence

*ABSENCE WAS NOT PROGRAM FOCUS



Incentives and External Monitoring

Incentives are only effective when strictly implemented without supervisor discretion.

Monitoring by Supervisors with Discretion

SUPERVISORS are in a good position to judge whether someone is absent for a good reason—for example, the bridge to the village collapsed—or is just skipping work. Giving supervisors the ability to provide rewards or penalties based on attendance is therefore a natural strategy to improve service delivery. However, incentive plans implemented by supervisors and tested by researchers have failed because supervisors gave rewards and failed to implement penalties even when absenteeism persisted.

The Early Childhood Education project in Kenya, implemented by International Child Support (ICS) Africa and studied by Kremer and Chen (2001), offered attendance incentives to pre-primary school teachers in randomly selected program schools. The school principal was charged with monitoring attendance and awarding a bicycle to each teacher with sufficient attendance at the end of the term. If a teacher did not qualify for the award, the school would keep the money for the prize.

In every treatment school the principal reported sufficient attendance for the teacher to get the

prize. Yet, unannounced visits in treatment and comparison schools found that absence rates were high and exactly the same across both groups. The program had no effect. **1** Apparently, principals did not accurately enforce the attendance incentives.

Seva Mandir installed date and time-stamping machines in clinics in Udaipur, India to monitor nurses and help local government officials implement incentives for nurses' attendance. Absent nurses would be paid less and could be fired. However, absences for legitimate reasons such as meetings could be "excused" by supervisors.

Banerjee, Duflo, and Glennerster (2008) find that, for the first few months, the program increased attendance. However, the program's effectiveness quickly degenerated. Nurses deliberately broke several machines. Moreover, supervisors substantially increased the number of absences they excused—even on days when no meetings were held and no legitimate excuses were available. By failing to abide by the machine's monitoring, supervisors undercut the program. The effect of the program dissipated; nurses in the incentive group were soon absent as frequently as those in the comparison group. **2**

Incentives for Outcomes

ONE WAY to circumvent supervisor discretion is to tie rewards to final outcomes. Since schooling is important because learning is important, should teachers earn incentives based on students' test scores? Would teachers work harder? Surprisingly, giving teachers incentives based on test scores did not work as well at reducing teacher absences as rewarding students for higher test scores through a system of merit scholarships.

ICS Africa rewarded teachers in 50 rural schools in Kenya with prizes once a year based on their performances on standardized tests (Glewwe, Ilias, and Kremer, 2003) These incentives were significant (almost half of monthly salary), and they did motivate teachers. But, because the reward was not closely tied to attendance, neither was the result. Teacher attendance did not go up, and teaching did not improve. **3** Instead, teachers held more test preparation sessions; as a result, test scores went up but only temporarily.

A similar program in Andhra Pradesh, India, raised students' test scores—even on subjects for which there were no incentives (Muralidharan and Sundararaman, 2006). While teachers did hold more after school classes there was no effect on teacher attendance during regular hours. **4**

The Girls Scholarship program in Kenya, also run by ICS Africa, offered scholarships to sixth-grade girls who scored highest on tests, and showed an unintended (though positive) impact of incentives. Kremer, Miguel, and Thornton (2007) find that girls eligible for the scholarship showed academic improvement—as did girls who were unlikely to win and boys, who could not win. Teachers—who received no incentives themselves from the program—responded to students' increased motivation to learn and were absent 4.8 percentage points less than teachers in control schools. **5** In other words, teachers responded to students' increased motivation to learn.

WHEN TEACHERS WANT TO TEACH

In addition to attaching financial rewards to external monitoring or to facilitating local monitoring, a natural strategy is to encourage teachers to want to teach. Several interesting results suggest non-monetary motivation can promote attendance, but the details need more experimentation.

For example, the Girls' Scholarship Program in Kenya increased teacher attendance despite offering teachers no monetary rewards and threatening no punishment. We cannot isolate exactly how, but students' motivation translated into teachers' effort. When the Extra Teacher Program, also in Kenya, paired a new contract teacher with a civil service teacher, it split the class in two. As a further randomized experiment, in half of the schools these classes were tracked into a more and less accelerated group. Civil service teachers whose half-class was tracked came to school more often—but only if they were assigned the more advanced half.

Is an appreciated or contented teacher less likely to be absent? If so, a program carefully designed around a teacher's situation could be successful without being financially expensive. It is not yet known exactly how teachers should be encouraged to want to teach. Researchers in J-PAL's network are continuing to experiment with making teaching rewarding.

INTRINSIC MOTIVATION AND EXTERNAL MONITORING

A common concern with incentive schemes is that they destroy the intrinsic motivation of those involved. Incentivizing attendance may generate mere attendance—and no work. The experiments summarized in this review found no evidence of this: if a program increased the attendance of teachers or health workers it also improved final outcomes. This was true in the Girls Scholarship program in Kenya, the Citizen Report Card in Uganda, the Extra Teacher program in Kenya, and the camera program in India.

The camera program specifically tested whether incentives undermined motivation and whether incentivizing teachers just to be present would lead them to show up but not work. Data was collected not only on teacher presence in treatment and comparison schools, but also on whether the teacher was teaching when a monitor turned up at the school. They found that a teacher receiving financial incentives for attendance was as likely to be teaching while at school as a teacher in the control group. Thus, increased presence translated into more teaching.

Picture Perfect: Objective, Impersonal Criteria

CONSIDERING the problems with supervisors rewarding providers for attendance, should rewards be based on an objective monitoring system without discretion? A program run by Seva Mandir in India and evaluated by Duflo, Hanna, and Ryan (2008) shows just how effective this approach can be.

In rural Udaipur, India, 120 of Seva Mandir's non-formal, single-teacher schools were randomly sorted into incentive and comparison groups. Teachers in comparison schools were paid the normal rate of \$23 per month. Teachers at the 60 program schools were given a camera with a tamper-proof date and time stamp. They received a base pay of \$11.50 per month, and were told they would receive \$1.15 more for each day they were present, as documented by two photos of the teacher with students taken at least five hours apart.

Teacher absence fell quickly and stayed low. Overall, absences dropped by 20 percentage points. **6** Extreme delinquency was eradicated, and 36 percent of program teachers had better than 90 percent attendance rates. A year later, student test scores were significantly higher in the treatment schools. Strictly administered incentives worked.



Local Monitoring and Accountability

Given how badly health and education systems are serving the poor, much recent policy has focused on efforts to empower the local population to demand better services. Several approaches have been tried and a number have been rigorously tested—with mixed results.

Community Mobilization and Information

ONE POPULAR recommendation for improving services is to mobilize and empower communities to hold providers accountable. Service recipients may be unaware of the quality of their care, or of available opportunities for improvements. If so, information and mobilization campaigns could improve service delivery. The evidence on this approach is mixed.

A program run by Pratham, an experienced NGO in India, spent three days informing villagers about the low quality of educational achievement in the village and about Village Education Committees (VECs)—which provided the structure for community oversight but were largely unused. Banerjee, et al. (2008) find this program was not successful in stimulating more active oversight by the community. There was no reduction in the absence rates of teachers—even those nominally reporting to the VEC. **7**

In contrast, the Citizen Report Card program in Uganda, analyzed by Björkman and Svensson (2007), had a very similar structure and was very successful. As with the Pratham program, the Citizen’s Report Card informed communities about the quality of services (in this case health care service) but went further to facilitate a “shared action plan” to monitor providers, including a “community contract.” The result was better quality health care, which Björkman and Svensson attribute to increased provider effort. Although provider absence was not the focus of the program, the program resulted in a 10 percentage point improvement in attendance. **8**

Falling somewhere between these extremes was AGEMAD, an education management initiative in Madagascar, evaluated by Nguyen and Lassibille (2008). This program provided parents with school report cards describing dropout rates, exam performance, and grade repetitions relative to each school’s resources. It also facilitated parent-teacher meetings to discuss report card performance. This form of externally organized community monitoring increased teacher preparation and student attendance, but teacher attendance did not improve. **9**

It is unclear exactly what explains these different effects. In addition to the obvious differences (Pratham’s intervention was in India and on education; the Citizen’s Report Card was in Uganda and covered health, AGEMAD was in Madagascar and on education), in India it was left to the community to sustain organized action, while in Uganda the facilitators worked on a more detailed action plan or “community contract” and provided more follow up.

These mixed results are unsurprising because the goal of community monitoring is ambitious: to make providers more accountable by making communities more active without actually changing who hires and fires providers. In addition to the coordination and free-riding challenges to collective action of this kind, community members are usually poorer, less educated, and less connected than providers—in other words they have less power. The studies discussed in the early part of this review suggest that all too often supervisors care more about the interests of providers than those of beneficiaries. If so, mobilizing community members to complain, without giving them the power to take decisive action, may not always work.



Local Accountability with Teeth

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If government supervisors of health and education systems care more about their staff than about the local population, why not make the local population responsible for hiring and firing providers? The Extra Teacher Program, run by ICS in Kenya, tested a range of different approaches to improving education, including hiring locally accountable teachers, tracking students by ability level, and training the local school committees that oversaw these teachers. Locally accountable teachers had much lower absence rates than centrally hired teachers and were paid a fraction of the salary. In other words, the program saved money (compared to hiring a new government teacher) and reduced absenteeism. It also raised test scores.

In 210 schools studied by Duflo, Dupas, and Kremer (2008), the average first grade class had 83 students. These classes were taught by relatively highly paid civil service teachers, who were accountable to the central government and frequently absent or not teaching. To test both the impact of reduced class size and the relative effectiveness of locally hired teachers, ICS hired an additional teacher and created two smaller classes at 140 schools. These “extra teachers” were hired locally, on one-year contracts, at a quarter of the cost of civil service teachers, but with the same academic qualifications. Whether students received a government teacher or extra teacher was random. Additionally, in half the

schools that received an extra teacher, the school committee of local parents received resources and funding to oversee the contract teacher.

The results demonstrate that compensation and oversight of teachers matter for attendance. Contract teachers were 16 percentage points more likely to be teaching than civil service teachers in schools that did not participate in the program. **10** Relative to civil service teachers in the extra teacher schools, contract teachers were 29 percentage points more likely to be found in school teaching. Training the school community did not further increase contract teacher attendance, perhaps because renewable contracts already provided significant motivation.

As has been found elsewhere, simply providing extra teachers without changing the accountability structure only made absenteeism worse. Conceivably, making a teacher’s work easier by reducing his class size would make him more willing to come to work. The opposite happened. Government teachers whose class size was reduced by the appointment of a locally hired teacher were 15 percentage points less likely to be teaching if present than those in comparison schools. This translated into a 12.9 percentage point decrease in teacher presence in the classroom. Providing training to local school committees (in an effort to make them more effective) partially mitigated this effect in Kenya. When school committees were trained, government teachers with reduced class size became 7.3 percentage points more likely to be in class teaching compared to government teachers with smaller classes but without trained school committees.

Hiring locally accountable teachers at a fraction of the cost of regular government teachers is an increasingly popular option as countries across Africa and Asia attempt to adjust to higher primary enrollment at an affordable cost. Making these teachers truly accountable to the local community—with short-term renewable contracts—appears to be a promising option for addressing the chronic problem of absenteeism. But the accountability mechanism must have teeth. Many of the teachers in the Pratham Village Education Committee program discussed above were nominally hired and monitored by (mainly nonfunctioning) VECs; even strengthened VECs did not prevent high absence rates.



Cost Effectiveness

Most programs surveyed here did not reduce absence—but of those that did, most were surprisingly cheap.

FIGURES 2 & 3 compare the impact on absence and the cost-effectiveness of the programs surveyed. Only the camera program in India, the Girls' Scholarship and Extra Teacher programs in Kenya, and the Citizen Report Card program in Uganda had a detectable effect on service provider absence.

Of these, the camera and Girls' Scholarship programs achieved an additional day of teacher attendance for similar costs: \$2.20 per day in the camera program and \$2.00 per day for the Girls' Scholarship Program. To put this in context, the daily salary of a teacher in an informal school in India was \$0.75, and in Kenya it ranged from \$5 to ten \$10. Because the attendance incentives in the camera program proved equal to the salary teachers would have otherwise been paid, the only net cost was for monitoring. In Kenya, the cost was the scholarships provided to girls (a transfer).

The Citizen Report Card had broad objectives and achieved better health outcomes, greater use of

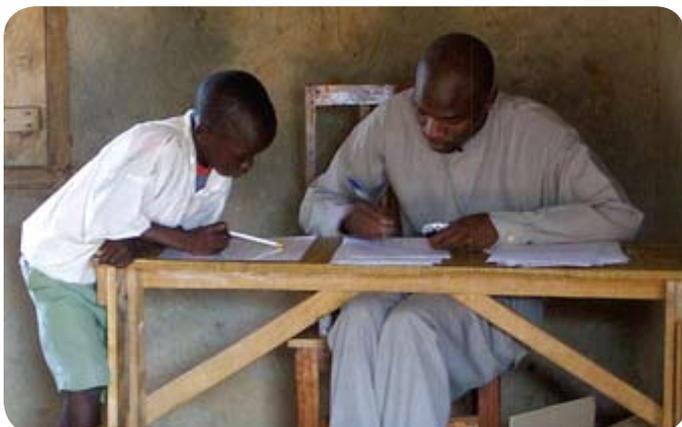
health services, and more health inputs. If the program is considered solely as a mechanism to improve provider attendance and the total cost of the program is attributed to this goal, it achieved better service provider attendance at a cost of \$25 per worker per day.

The Extra Teacher Program added a contract teacher with high attendance in addition to increasing existing teachers' attendance. Because the extra teachers attended more and were paid less, comparing renewable-contract teachers to civil service teachers in schools outside of the program implies that each extra day of teaching cost -\$25.73; buying more teaching was cheaper. Importantly, completely replacing civil service teachers with contract teachers may eliminate rather than extend this effect: if contract teachers worked harder only because they hoped to earn civil service jobs, such a program would eliminate their motivation.

POLICY LESSONS

These studies demonstrate that service provider absence is severe and that motivating better delivery is complex. Yet, a few lessons are clear:

- 1.** Service provider absence is a serious problem for the world's poor.
- 2.** Supervisors can undermine the effectiveness of incentive programs if they are given any discretion about whether providers are rewarded for attendance. Supervisors tended to reward providers whether or not they turned up and to excuse any and all absences.
- 3.** Taking out supervisor discretion and basing rewards for attendance on impersonal, objective monitoring significantly improved attendance, even with only modest incentives. It did not destroy intrinsic motivation.
- 4.** Community-based mobilization and information has mixed results, is complex, and needs more study.
- 5.** Accountability with teeth—where providers are hired and fired by local communities—is very promising.



FOR FURTHER READING

- 1** Kremer, Michael and Daniel Chen (2001). "Interim Report on a Teacher Attendance Incentive Program in Kenya."
- 2** Banerjee, Abhijit, Esther Duflo, and Rachel Glennerster (2008). "Putting a Band-Aid on a Corpse: Incentives for Nurses in the Indian Public Health Care System."
- 3** Glewwe, Paul, Nauman Ilias, and Michael Kremer (2003). "Teacher Incentives."
- 4** Muralidharan, Karthik and Venkatesh Sundararman (2006). "Teacher Incentives in Developing Countries: Experimental Evidence from India."
- 5** Kremer, Michael, Edward Miguel, and Rebecca Thornton (2007). "Incentives to Learn."
- 5** Duflo, Esther, Rema Hanna, and Stephan Ryan (2008). "Monitoring Works: Getting Teachers to Come to School."
- 7** Banerjee, Abhijit, et al. (2008). "Pitfalls of Participatory Programs: Evidence from Three Randomized Experiments in India."
- 3** Björkman, Martina and Jakob Svensson (2007). "Power to the People: Evidence from a Randomized Field Experiment of a Community-Based Monitoring Project in Uganda." Center for Economic Policy Research. Discussion paper 6344.
- 9** Nguyen, Trang, and Gerard Lassibille (2008). "Improving Management in Education: Evidence from a Randomized Experiment in Madagascar."
- 10** Duflo, Esther, Pascaline Dupas, and Michael Kremer (2007). "Peer Effects, Pupil-Teacher Ratios, and Teacher Incentives: Evidence from a Randomized Evaluation in Kenya."

Banerjee, Abhijit, and Esther Duflo (2006). "Addressing Absence," *Journal of Economic Perspectives*.

Chaudhury, et al. (2006). "Missing in Action: Teacher and Health Worker Absence in Developing Countries." *Journal of Economic Perspectives*.

Banerjee, Abhijit, et al. (2004). "Health Care and Delivery in Rural Rajasthan." *Economic and Political Weekly*.



Showing Up is the First Step

Sector Review: Solving chronic absenteeism is key to any reform of health and education systems in poor countries.

- Absenteeism of teachers, doctors, and other service providers in developing countries is widespread and unpredictable.
- Supervisor discretion undermines attempts to incentivize teachers and nurses.
- Attempts to increase accountability to the poor had mixed effects on absence.
- What worked best were impersonal, direct incentives for attendance.
- The institutions that deliver public services are complex and the details matter.