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The impact of training informal health care providers in India: A randomized controlled trial

Jishnu Das, Abhijit Chowdhury, Reshmaan Hussam and Abhijit V. Banerjee

Health care providers without any formal training provide more than 70% of all primary care in rural India. A new study combines unique data from standardized patients ("mystery clients") with random assignment to a training program conducted by The Liver Foundation in West Bengal to assess whether training can improve their quality of care.

Why is this important? In many low-income countries, including India, health care providers without formal medical training account for between one-third and three-quarters of primary care visits. What to do about such informal providers in India is a highly charged debate. While the Indian Medical Association argues that any kind of training would legitimize an illegal activity, others believe that training can act as a stopgap solution to rural India's severe shortage of trained personnel and serve as an effective complement to reform in the public sector. There is currently no evidence on the benefits of training (or the lack thereof) on the quality of care provided by informal providers.

What are the questions that the study addresses? When people in Indian villages fall sick, they often go to a village provider—who in many cases, has received no formal medical training. As the source of primary care, these providers are asked to provide a broad range of services. They are expected to *treat* patients with conditions that can be managed in a primary care setting; *refer* patients with serious conditions to higher-level care; and *diagnose and manage* patients with chronic conditions. Our study was uniquely designed to assess whether a 9-month long training program, implemented through 72 teaching sessions, would allow informal providers to improve along each of these three types of services. We assessed:

- Does training improve the ability of informal providers to correctly diagnose and manage different conditions?
- Does training decrease the use of unnecessary medicines, injections and antibiotics among informal providers?

We were also concerned that any positive effects may not be sustainable if training adversely affected the providers' patient loads, and in turn the profitability of their practice. Therefore, we also assessed:

- How does training affect the patient load and revenues of informal providers?

What techniques do the authors use to address these questions?

Our study was completed in three phases.

- In the **first** phase, 152 informal providers were randomly selected (out of a total of 304) to participate in a training program implemented by The Liver Foundation. The training program was implemented over 9 months in 72 classroom training sessions. The remaining 152 providers were offered training after the completion of the study and thereby served as a "control" group.
- In the **second** phase, we sent standardized patients (mystery clients) to all providers in our sample, regardless of whether they had received training or not. The standardized patients were recruited from West Bengal. Each standardized patient was extensively trained to present one of 3 different conditions and all 3 conditions were presented to each provider to evaluate their ability to correctly diagnose and manage them. Since the implementers of the training program did not know what conditions the standardized patients were going to present, and therefore could not tailor the training to these conditions, we believe that we interpret our results in terms of upgrading in their

overall skill level. In addition, the standardized patients did not know whether the providers they visited had been trained by the Liver Foundation. Finally, we also sent standardized patients to every public clinic in the 203 villages that our informal providers came from as an additional benchmark for the effect of training. Reflecting the scarcity of trained medical professionals in the region, we were able to locate only 11 Primary Health Care Centers in these villages, each of which we evaluated using standardized patients.

- Because standardized patients allowed us to assess care only for these 3 conditions and not for the multitude of cases that informal providers are asked to provide care for, in the **third** phase, we sat in the clinics of the informal providers for a full day, recording key details of all clinical interactions.

What does the study find?

1. Average attendance in the program was 56 percent. The main reasons for non-attendance were distance from the training center and excessive rain. The correlation between attendance and distance to the training center suggests that if each provider could access training within 5 kilometers from his or her clinic, attendance would increase to 80 percent.
2. Assignment to training increased the likelihood of correct case management by 7.9 percentage points against a control group mean of 52 percent. If attendance had been 100 percent (instead of the 56 percent we observe), training would have increased correct case management by 13.3 percentage points instead. We find that providers assigned to training were more likely to complete recommended checklists of history questions and examinations, both among standardized patients and in clinical observations.
3. Public sector doctors were 14.7 percentage points more likely to correctly manage a case than untrained informal providers. Training closed half the gap in correct case management relative to the public sector.
4. However, there was no decline in the use of unnecessary medicines, antibiotics or injections among providers who were trained. Strikingly, both trained and untrained informal providers were *less* likely to give unnecessary medicines and antibiotics relative to doctors in the public sector.
5. The training increased the patient load of the provider. Although we did not experiment with providers' willingness to pay for the program, we compute that the increased revenue would compensate for the cost of training within 66 days if we use the higher end of our patient load estimates, or 210 days if we use the lower end of our patient load estimate.

What do the findings mean? Informal providers are the mainstay of India's primary care system. Our study demonstrates that training informal providers does not worsen care, as has been argued by representatives of the Indian Medical Association. In contrast, we find that training improves their ability to correctly diagnose and manage multiple conditions and although it does not reduce their likelihood of providing unnecessary medicines or antibiotics, it does increase it either. The low costs of training imply that permanently hiring just 11 additional fully trained MBBS providers into the public sector would be as costly as training 360 informal providers *every year* through this program.

Read more: This study appears as an online Research Article with a print summary in the October issue of the journal *Science*.

About the authors: Jishnu Das is at the World Bank and the Center for Policy Research, New Delhi. Abhijit Chowdhury is at the Institute of Post Graduate Medical Education and Research, SSKM Hospitals, Kolkata, West Bengal. Reshmaan Hussam is at the Economic Growth Center in Yale University and Abhijit V. Banerjee is at the Department of Economics in MIT.

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