Summary of Current Evidence

Using Incentives and Enablers for Improved DOTS Performance

Management Sciences for Health
is a nonprofit organization
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Sangeeta Mookherji
Alix Beith
July 2006
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RPM Plus works in more than 20 developing and transitional countries to provide technical assistance to strengthen drug and health commodity management systems. The program offers technical guidance and assists in strategy development and program implementation both in improving the availability of health commodities—pharmaceuticals, vaccines, supplies, and basic medical equipment—of assured quality for maternal and child health, HIV/AIDS, infectious diseases, and family planning and in promoting the appropriate use of health commodities in the public and private sectors.

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ACRONYMS

AIDS acquired immunodeficiency syndrome
BRAC Bangladesh Rural Advancement Committee
CB community based
CDC U.S. Centers for Disease Control and Prevention
CHW community health worker
DOT directly observed treatment
FIDELIS Fund for Innovative DOTS Expansion through Local Initiatives to Stop TB
HIV human immunodeficiency virus
I&E incentives and enablers
IDA International Dispensary Association
IEC information, education, and communication
MOH Ministry of Health
MSH Management Sciences for Health
NGO nongovernmental organization
NTP national tuberculosis program
OR operations research
PP private provider/practitioner
RNTCP Revised National Tuberculosis Control Programme
RPM Plus Rational Pharmaceutical Management Plus Program
TB tuberculosis
USAID U.S. Agency for International Development
WFP World Food Programme
WHO World Health Organization
BACKGROUND

Worldwide, a range of stakeholders participate in the implementation of the World Health Organization (WHO) recommended tuberculosis (TB) control strategy known as DOTS. At the country level, these stakeholders include patients, their families and communities, health service providers, system managers, and policy makers, to name only a few. Effective DOTS demands much from each of these players, and the stakes are high—second to HIV/AIDS, TB is the infectious disease that kills most adults worldwide, and the TB epidemic continues to worsen, partly due to increasing HIV/AIDS infection.

<table>
<thead>
<tr>
<th>Some Top Challenges Faced by DOTS Programs in High TB Burden Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ensuring that patients are diagnosed and initiate tuberculosis treatment quickly</td>
</tr>
<tr>
<td>• Ensuring that patients are enabled and motivated to complete a full course of therapy</td>
</tr>
<tr>
<td>• Ensuring that providers are motivated and able to assist patients in this process while providing safe and appropriate care</td>
</tr>
<tr>
<td>• Ensuring that policy makers and managers mobilize the resources and create the policy environment to allow the implementation of DOTS, as well as other interventions that contribute to health improvement, especially for the poor</td>
</tr>
</tbody>
</table>

Many TB programs throughout the world are seeking to improve patient adherence to DOTS and, increasingly, case detection through a variety of incentives and enablers (I&E) provided for TB patients and DOTS providers. Since 2001, a team of staff from the Management Sciences for Health (MSH) Rational Pharmaceutical Management (RPM) Plus Program, with support from the U.S. Agency for International Development (USAID); the Stop TB Partnership, and the World Bank have been documenting the use of these I&E schemes. Specifically, the team has attempted to look at the design, feasibility, effectiveness, and impact of incentives and enablers.

The joint work program team has gathered evidence from a variety of sources—a literature review, an ongoing survey of global experiences, motivations mapping workshops conducted in three countries, technical assistance to the development of operations research (OR) studies of I&E, workshops on I&E held in global forums, and ongoing dialogue with country-level TB

1 The term “provider” refers to formal public or private health workers (doctors, nurses, community health workers) and other individuals (treatment supporters, managers), institutions (hospitals, clinics, nongovernmental organizations), or government bodies involved in TB control.

2 For the purposes of this work, we adopted the following definitions:

**Enabler:** Makes something possible, practical, or easy; allows action based on existing motivations or to achieve performance standards or goals within existing systems frameworks.

**Incentive:** Incites someone to determination or action; introduces additional motivations to achieve existing performance objectives or to achieve higher performance standards.

3 For more information, see [http://www.msh.org/projects/rpmplus/3.5.5.htm](http://www.msh.org/projects/rpmplus/3.5.5.htm).
control programs and projects. Based on these sources, the team developed underlying hypotheses and identified key findings related to the use of I&E for TB control.

**Underlying Hypotheses for I&E**

- A range of variables affect the ability and motivation of stakeholders at all levels to engage in the DOTS approach. These variables include norms and knowledge, functional inputs, financial interests, social interests, and regulatory/management frameworks.

- Factors that disable or demotivate patients or providers may especially affect the poor and others who are also marginalized.

- Modification of the enabling and motivating environment can improve DOTS performance. The environment can be modified by improving the socioeconomic and political context, the health system capacity, and the core DOTS practice as well as through implementation of explicit incentives and enabler interventions.

- Incentives exist for all stakeholders, whether intended or unintended, and some may create motivations that may not fully support the objectives of TB control. Well-designed incentive and enabler schemes can potentially overcome motivational barriers that may interfere with individual stakeholders’ contributions to TB control goals.

- No set of incentives and enablers is likely to be appropriate, feasible, or effective across all countries or programs. Those schemes adopted should depend on the underlying socioeconomic, health system, and DOTS expansion context.

For implementing I&E in TB control, it is important that a well-functioning DOTS program is already in place (Figure 1), and that health systems strengthening interventions are not bypassed in favor of I&E. Ideally, I&E should build on strong DOTS and accompanying health systems, bringing additional gains to already solid achievements. This is the current situation with TB control in India, where the Revised National Tuberculosis Control Programme (RNTCP) has made impressive gains in TB control along with expansion of DOTS and is ready to consider more nuanced approaches to improving program performance and quality, such as incentives and enablers.
Figure 1 also implies that when an identified performance barrier or program problem is being addressed, ideally all underlying causes should be examined, beginning with social, geographical, political, and economic factors. Then DOTS and health systems issues should be addressed, and finally, the potential of incentives and enablers. For example, one identified problem may be that patients fail to come to TB units to take medicines. One underlying cause of this problem may be prohibitive transport costs (both direct and indirect in terms of time). There may be several ways to lower these costs to patients; for example, directly observed treatment (DOT) and microscopy networks could be expanded so that the costs of access are reduced, or direct and indirect costs could be subsidized or reimbursed with cash or vouchers. The first example can be considered both a DOTS expansion strategy and a patient enabler. However, additional incentives may be needed to induce more labs and DOT providers to join the network and to ensure that they meet DOTS quality standards. The second example can be considered both an enabler and an incentive. It enables patients to access care and if the subsidy or voucher is provided only at DOTS units, then it is also an incentive to seek care directly from quality-ensured centers. Figure 2 provides more examples of incentives and enablers.
To help TB control programs identify key performance challenges, underlying motivational causes, and the range of possible solutions, a tool was developed to use with TB program managers in a workshop setting by the joint work program of MSH/RPM Plus and Stop TB/WHO. Conducting this workshop in three country settings (China, Uganda, and Tanzania) showed that many interventions to strengthen DOTS and health systems are often viewed as enablers by TB program managers and as incentives by TB program staff. The three pilots also demonstrated that mapping stakeholder motivations in TB control can make a difference in planning for the design, implementation, and evaluation of I&E.

4 See http://www.msh.org/rpmplus/pdf/TB/Workshops/Mapping_Motivations_for_TB_Control-Workshop_Tool.pdf for the tool and http://www.msh.org/rpmplus/3.5.5h.htm for country-specific workshop information (from China, Tanzania, and Uganda).
WHAT ARE THE I&E EXPERIENCES AND EVIDENCE?

Globally, a wide variety of I&E schemes are currently used. Most have been implemented with the objective of increasing treatment adherence; some were designed to target hard-to-reach populations. Increasingly, case detection is becoming the focus of I&E as treatment adherence levels reach the global target. I&E may target patients and providers, e.g., public or private health workers at all levels, DOT providers, lab technicians, and are sometimes performance-based. Importantly, a range of I&E schemes are being used, including incentives for providers; many of the schemes are non-monetary. Food support for patients is of great interest to many TB control programs, although experiences point to important programmatic pressures that must be considered before launching such support (see box below).

Food Support to TB Patients in Cambodia

Food support was introduced alongside DOTS in 1994, with support from the World Food Programme (WFP), which already had a strong presence in Cambodia. Both DOTS and food support were rapidly scaled up to cover the entire country. Every TB patient receives a monthly supply of dry and tinned rations. WFP procures and distributes the food. The program is jointly managed by the Cambodian National Tuberculosis Program (NTP) and WFP. Food distribution emerged as an increasing challenge as the program decentralized and extended DOTS to the community level.

A case study conducted in 2002 by MSH and the World Bank identified several key question TB control programs should ask when considering food support to patients—

1. Is treatment adherence a major TB performance challenge?
2. Are there adequate TB program management resources?
3. Are food security and income poverty challenges for the target population?
4. Is there a pre-existing food procurement and distribution infrastructure (e.g., WFP presence)?
5. How much of a challenge will monitoring and leakage prevention be?


Available evidence suggests that performance-linked schemes may be better at improving program outcomes; however, there appears to be variability in reported impact. The source of financing for provider incentives may be important for the types of program performance gains desired (see box below). Overall, evaluation of ongoing schemes has been insufficient and therefore provides little hard evidence to explain the variations in impact. Additional evidence is awaited from operations research and well-executed evaluations on the feasibility, impact, and cost-effectiveness of different I&E schemes.
Evidence related to the impact of using incentives or enablers is problematic for several reasons. First, most of the evidence available from high-burden countries is based on small-scale I&E schemes implemented in concentrated geographic areas or targeted to very specific populations. Therefore, it is difficult to generalize experiences and expected impact. Second, and more important, most I&E schemes were not designed, implemented, or evaluated in a systematic manner. Even those schemes with larger participation or coverage rarely included evaluation plans in their design or piloting stages. Third, and related to the second reason, it is difficult to attribute any observed improvements in DOTS program performance to I&E schemes because other interventions to strengthen DOTS or health systems may be ongoing simultaneously. Most of the evidence available is anecdotal or based on program data that measures performance improvements in I&E areas overall, without the capacity to separately measure incremental benefits of using I&E. As a response to this situation, several OR studies were initiated in 2003 and 2004 in a variety of settings, but results are not yet available.

Although drawing overall conclusions based on currently available evidence is difficult, there is sufficient evidence to suggest potential roles for incentives and enablers in improving various aspects of TB program performance, and to identify the relevance of I&E to particular DOTS
expansion strategies. Key findings related to I&E are presented below. Annex 1 provides tables that summarize specific experiences with using incentives and enablers for patients, DOT providers, and TB program performance, along with the evidence that those experiences generated.
KEY FINDINGS

Documented experiences indicate that incentives and enablers that are directly linked to measurable performance improvements may be more effective than unlinked measures. Prominent examples of large-scale programs of this type include food support programs to enhance participation and patient adherence in Cambodia, Peru, Sudan, and other locations. These programs involve formal collaboration between health and food assistance agencies to serve TB patients and other target groups. Other long-term, large-scale models are the BRAC patient deposit scheme and China’s village provider payment scheme (Annex 1). Both build on well-established infrastructure, standards of practice, and human resources that may not exist in other settings. While the incentive and enabler schemes are seen as important contributors to DOTS success, their incremental impact on case detection and case holding are not known. A case study of the Cambodia food support program suggests that it may be easier to establish a link between food support and treatment adherence than with case detection.

Improvements in core DOTS practice and health system functioning are themselves seen as critical enablers and motivators for both providers and patients. Motivation mapping workshops held in China, Uganda, and Tanzania highlighted that supportive supervision, training, and good logistics systems, e.g., drug supply and transport for patient outreach, are important motivators for DOTS providers. Improvements in provider payment, career ladders, and service cost reimbursement are important to individuals and institutions. Reducing the indirect costs of accessing and staying in treatment will likely improve patient involvement. Ongoing social stigma and lack of knowledge about TB and its control are likely important disincentives for participation in DOTS by all stakeholders, from patients to policy makers. Improvements in core DOTS practice and enhancements to DOTS, including financial or non-financial incentives and enablers, are both needed.

Data from 50 schemes in 25 countries were used to model the relationship between key I&E scheme and TB program characteristics and two outcome variables—improvements in treatment adherence and in case detection. Bivariate analyses show associations between patient I&E schemes and improved treatment adherence; between provider I&E schemes and increased case detection; and between DOTS-strengthening interventions and improvements in both outcomes. Patient schemes that combine incentives and enablers are more likely to be significantly associated with improved treatment adherence than those that use patient incentives alone. Provider incentive schemes are associated with the outcome variables only if they are linked to performance. These results support the anecdotal evidence that I&E are most effective when used in a strong DOTS program or along with interventions to strengthen DOTS, and when they are linked to performance.

Patient I&E

- Published evidence from lower-burden countries suggests that incentives and enablers can contribute to improved patient adherence to treatment within well-funded and well-managed TB control programs. Experience in the United States suggests lessons for high-burden TB settings. Where core functions such as sufficient staffing, lab capacity, and dependable
supply of pharmaceuticals are covered in high-burden settings, the use of I&E could be beneficial to improving adherence. The provision of certain I&E such as transportation vouchers or food to take with medicine can be meaningful for patients. Successful use of non-monetary incentives for patients and providers in the United States is particularly relevant for resource-limited high-burden settings and has the potential to improve the quality of care.

- Food support for TB patients is of great interest to TB control programs in a variety of settings, based on anecdotal evidence that it improves treatment adherence, and because of perceived nutritional needs of TB patients. Programs in high-poverty contexts may consider food support to be of particular relevance. Experiences in Cambodia, Brazil, El Salvador, Haiti, Peru, and Russia, however, indicate that food support places a substantial management and administrative burden on the program, not least with regard to food procurement, storage, distribution, and monitoring to suppress leakage.

- Many financial and material incentives for patients are in use beyond food support and deposit schemes. However, most are not sufficiently documented to suggest why they work or don’t work, or whether they can be scaled up as standard practice. Most of these schemes are focused on increasing adherence and are provided periodically at service sites.

**Provider I&E**

- Most incentives and enablers for providers are aimed at increasing capacity and willingness to seek out and serve patients beyond traditional DOT clinics. These may be linked to explicit performance measures, such as such as number of smear-positive cases detected and cases successfully treated, as are used in China.

- Providing incentives for the community health worker is the most common type of provider-targeted scheme. Rewards may be based upon referrals, diagnosis of sputum-positive patients, or cured patient/treatment completion, depending on the function of the community worker.

- Public-private mix experiences demonstrate that non-monetary, non-material rewards can also serve as powerful incentives for private providers; networking, recognition, and accreditation can motivate private providers/practitioners (PPs) to provide or link with DOTS programs.

- Experience with giving performance-based rewards to TB control program managers is limited. But performance-based payment for providing primary health care services, for example, offers evidence that such systems can effect positive change. As with any other type of I&E, performance-based reward systems require substantial administration and management input to ensure success.
Key Findings

I&E Design and Implementation

- The objective of the incentive or enabler must be clear to both patients and providers.
- The choice of beneficiaries can affect scheme success.
- There are significant management and administration requirements for I&E schemes, especially for food support.
- Needs-based assessments prior to implementation were shown to be useful for identifying both target groups and the most appropriate type of incentive or enabler.
- Cured patients and families of cured patients may be powerful promoters of case detection and referral, and can play a supportive role during the treatment process.
- Preventing and controlling for unintended perverse effects are critical. The public health community, including DOTS program managers, is justifiably cautious concerning the unintended or “perverse” effects associated with the use of incentives, particularly for providers. This caution is partly due to the generally narrow view of incentives, with a focus on financial incentives and their risks. However, there is also evidence that both monetary and material incentives can be misused, diverted, and perhaps lead to demand for ever-increasing levels of financial support. Experiences in Cambodia (patient food support) and in Bangladesh (patient deposits and CHW financial incentives) suggest that perverse effects can be contained with strong management and monitoring.

I&E Impact Evaluation

- Incentives were perceived to contribute to improved performance by nearly all programs implementing incentive and enabler schemes, either monetary or non-monetary. However, few concrete conclusions can be drawn due to the lack of clarity on indicators used in assessing impact and, in many cases, due to the small-scale nature of interventions.
- The key challenges to evaluating the impact of I&E schemes are attributing the impact of I&E among a host of concurrent interventions; identifying and using comparison groups; and overcoming potential ethical problems when using a comparison group.
- Little is known about the relative effectiveness of patient versus provider I&E schemes, or about any synergies and interactions between them.
## ANNEX 1. SUMMARY OF KEY I&E EXPERIENCES AND EVIDENCE*

### Table A-1. Incentives and Enablers for TB Patients

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Coverage/Participation</th>
<th>Management</th>
<th>Performance Links</th>
<th>Evaluation</th>
<th>Impact</th>
<th>Equity/Targeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh (BRAC)</td>
<td>Return of patient deposit**</td>
<td>60% of country</td>
<td>BRAC</td>
<td>Patient must complete treatment</td>
<td>Cost-effectiveness and treatment-seeking behavior study (1998); cost study (1994)</td>
<td>Significantly better treatment adherence and case detection, compared to national average</td>
<td>Poorer patients may delay treatment seeking, despite overall decreased treatment delay in incentive areas</td>
</tr>
<tr>
<td>Brazil</td>
<td>Food and transport vouchers</td>
<td>Rio de Janeiro</td>
<td>TB Control Program, city health department</td>
<td>Patient receives each time attends clinic for DOT</td>
<td>DOTS success evaluated, but not incentive scheme</td>
<td>Reported improved treatment adherence</td>
<td></td>
</tr>
</tbody>
</table>

* All tables in Annex 1 adapted from Mookherji, Weil, and Beith 2003.
** Patient and provider schemes are used together.
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</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Food baskets to poor patients</td>
<td>Rio de Janeiro (also non-DOTS facilities)</td>
<td>Social Development Municipal Secretary and TB Control Program</td>
<td>Patient must meet medical appointment and attend health education lectures</td>
<td>None</td>
<td>None reported</td>
<td>Poor patients; criteria is patient income</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Food support</td>
<td>All patients in country</td>
<td>Joint between NTP and WFP</td>
<td>Patient must continue treatment</td>
<td>No formal plan; case study conducted end 2002</td>
<td>Improvement in treatment adherence (qualitative; no data)</td>
<td>All TB patients receive food; some higher-income patients refuse</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Vouchers for purchasing goods given after diagnosis</td>
<td>Homeless people</td>
<td>TB Surveillance Unit, Ministry of Health (MoH) partners with 10 NGOs</td>
<td>Suspect must undergo diagnostic tests</td>
<td>Monitoring of case finding, compared to baseline data</td>
<td>Tripled case detection among homeless population</td>
<td>Hard-to-reach population (homeless)</td>
</tr>
<tr>
<td>El Salvador</td>
<td>Monthly food baskets</td>
<td>9 out of 14 administrative departments</td>
<td>Departments with Centers for Disease Control (CDC) support</td>
<td>Patient must adhere to treatment</td>
<td>Post-test evaluation; random selection of departments (2001)</td>
<td>No positive impact on adherence; negative impact found due to selection bias of patients receiving incentive, inadequate sample size, and irregular implementation of the incentive scheme</td>
<td>Poor patients</td>
</tr>
</tbody>
</table>
Annex 1. Summary of Key I&E Experiences and Evidence

| Location               | Type                                           | Coverage/Participation | Management                             | Performance | EVIDENCE                                                                 | Impact                                                                                           | Equity/Targeting                                                                 |
|------------------------|------------------------------------------------|------------------------|----------------------------------------|-------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Haiti (ICC-CAT)        | Monthly food baskets*                          | All sputum-positive patients at 27 TB units | ICC-CAT (local NGO), supported by NTP | Patient must attend clinic for treatment | Three-year pilot with control area; results presented 2003               | Cure rates and default rates improved in both incentive and comparison areas; improved slightly more in incentive areas | Poor patients; it was found that providers were just as poor, so food was given to them to prevent pilferage |
| India (Cochin city)   | Monetary support to enable travel, purchase food, and motivate behavior | Cochin municipality    | Urban poverty alleviation department of Cochin municipal corporation | Patient must attend clinic for treatment | Pilot test (only 16 TB cases found); redesigned to overcome stigma        | Increased number of sputum-positive patients identified and brought into DOTS               | Urban poor; the scheme is considered to increase access for marginalized and poor populations, rather than just serve to support active case finding |
| Peru                   | Monthly food baskets                           | All patients           | MoH                                    | Patient must attend clinic for treatment | 1998 (program then closed down)                                         | None documented                                                                      | Not applicable                                                                       |
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</thead>
<tbody>
<tr>
<td>Peru (PiH)</td>
<td>Social support (work referrals and health care for family), food, transport costs</td>
<td>Lima city (1,400 patients)</td>
<td>NTP, with assistance from PiH (international NGO)</td>
<td>Patient must continue treatment</td>
<td>Piloted in one area of Lima before expansion</td>
<td>80% cure of patients with multidrug-resistant TB</td>
<td>Patients living in poverty</td>
</tr>
<tr>
<td>Romania</td>
<td>Travel support for ambulatory patients</td>
<td>Only DOTS areas</td>
<td>NTP; DOT nurses</td>
<td>Patient must attend clinic</td>
<td>Natural experiment; scheme ended due to lack of funds</td>
<td>Compliance increased to 95%; when the scheme ended, compliance fell to 80%</td>
<td>Offset of patient costs increases access for poorer patients</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>Food, travel costs, and other material support*</td>
<td>Three oblasts (Novgorod, Ivanovo, Orel)</td>
<td>Oblasts, along with support from IFRC, KNCV, Centers for Disease Control</td>
<td>Patient must attend clinic for treatment</td>
<td>Pilot tests before regional introduction</td>
<td>Reported decrease in treatment interruptions and defaulters, and accompanying increase in treatment completion; increasing cure rates in Ivanovo Oblast after a period of falling rates</td>
<td>Offset of patient costs increases access for poorer patients</td>
</tr>
</tbody>
</table>
### Table A-2. Incentives and Enablers for DOT Providers

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh (BRAC)</td>
<td>Partial retention of patient deposit upon treatment completion*</td>
<td>60% of country</td>
<td>BRAC</td>
<td>DOT provider (CHW) must ensure treatment completion</td>
<td>Qualitative study (2004)</td>
<td>Significantly better treatment adherence and case detection than national average</td>
<td>Providers who are women and usually poor are empowered as beneficiaries</td>
</tr>
<tr>
<td>Bangladesh (Damien Foundation)</td>
<td>Travel expenses, food, doctor’s bag for village doctors</td>
<td></td>
<td>Damien Foundation</td>
<td>Village doctor must attend DOTS training, provide DOTS to at least four patients, and regularly refer suspects</td>
<td>Suspects referrals reviewed (2002)</td>
<td>Village doctors referred 3% of all sputum-positive patients (as many as NGOs and other doctors); assessed as a cost-effective approach for case finding and holding</td>
<td>Likely reaching more suspects and reaching them earlier</td>
</tr>
<tr>
<td>Bolivia</td>
<td>Cash paid to TB nurses for CB-DOTS in municipalities</td>
<td>200 nurses working in municipalities prioritized for TB control</td>
<td>NTP at central and regional levels</td>
<td>Nurses who complete 10 extra days of work visiting TB patients during non-working hours receive</td>
<td>Not able to distinguish incentive impact from impact of CB-DOTS</td>
<td>Patient coverage increased to 97% Reduction in default from 8% in 2001 to 4.3% in 2003 Quality of diagnosis improved</td>
<td>Active seeking of patients who abandoned treatment</td>
</tr>
</tbody>
</table>

* Patient and provider schemes are used together.
### EXPERIENCE

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>China</td>
<td>Village doctors referring sputum-positive patients to TB center receive payment. Health care workers responsible for cure of sputum-positive patients receive payment upon treatment completion.</td>
<td>Half of all provinces (those with DOTS in World Bank project areas)</td>
<td>MoH, through local government</td>
<td>Providers must refer suspects DOT provider must ensure treatment completion and cure verification</td>
<td>None planned</td>
<td>None reported yet</td>
<td>To improve access by including village doctors in DOTS network</td>
</tr>
<tr>
<td>India (Pune)</td>
<td>Payment to private providers upon patient cure; referred patients receive priority treatment at microscopy centers</td>
<td>Pune (population 1 million) Private providers who provide DOT and are associated with registered NGOs</td>
<td>Local RNTCP staff; Pimpardi Chinchwad Municipal Corporation</td>
<td>PPs who provide DOT must ensure treatment completion</td>
<td>Regular monitoring of default and case detection</td>
<td>Reported default rate of zero; increases in referrals and number receiving treatment from private providers</td>
<td></td>
</tr>
<tr>
<td>Peru (PiH)</td>
<td>Transport and monthly food baskets to DOT providers of patients with multidrug-resistant TB</td>
<td>Lima city</td>
<td>NTP, with assistance from PiH (international NGO)</td>
<td>Health worker must visit patients with multidrug-resistant TB</td>
<td>Piloted in one area of Lima before expansion</td>
<td>High cure rates and low default rates are attributed to scheme, although evaluation methods not clear</td>
<td>Sickest and poorest patients</td>
</tr>
</tbody>
</table>
### Table A-3. Incentives and Enablers for TB Program Management

<table>
<thead>
<tr>
<th>Location</th>
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<th>Management</th>
<th>Performance Links</th>
<th>Evaluation</th>
<th>Impact</th>
<th>Equity/Targeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russian Federation</td>
<td>Fuel for hospital cars to perform home DOTS and trace defaulters*</td>
<td>Three oblasts (Novgorod, Ivanovo, Orel)</td>
<td>Oblasts, along with support from IFRC, KNCV, CDC</td>
<td>Provider must provide home DOTS and trace defaulters</td>
<td>Pilot tests before regional introduction</td>
<td>A decrease in default rates attributed to scheme</td>
<td>Increases access to hard-to-reach patients, who are more likely to default</td>
</tr>
<tr>
<td>Brazil</td>
<td>Municipalities are paid for each cured TB patient; two levels of fees: higher for supervised patients than for self-administered</td>
<td>All municipalities Average of 950 patients per year</td>
<td>MOH</td>
<td>Verified patient cures DOT is rewarded with higher fees</td>
<td>None planned</td>
<td>Average annual cost to MoH: approximately 55,000 U.S. dollars</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Summary of Current Evidence: Using Incentives and Enablers for Improved DOTS Performance
REFERENCES


