INTRODUCTION

In spite of having a comprehensive service delivery infrastructure from grassroots to tertiary levels, there is significant underutilization of the existing capacity for maternal health services, especially due to shortages of qualified staff, and sub-optimal performance of providers. On this backdrop, a pilot study on pay-for-performance (P4P) for providers was initiated in Bangladesh. The P4P study has been included as a human resource innovation project under the operational plan of Ministry of Health and Family Welfare, Government of Bangladesh.

OBJECTIVE

The key objective of the study was to test the effectiveness of introducing P4P model for increasing utilization of maternal health services from facilities for contributing to the Millennium Development Goal (MDG) 5 of reducing maternal mortality.

STUDY DESIGN

The study, with separate sample pre-test/post-test control group design, had three arms: one control and two interventions. Two strategies were employed in two intervention arms for 14 months, while the control group remained unexposed of any intervention. The ‘first strategy’ was a combination of pay-for-performance and demand-side-financing while the ‘second strategy’ employed only the pay-for-performance incentives for facility-based providers. Comparison between the control and intervention groups informs the effectiveness of the incentive model while comparison between the two strategies measures the relative effectiveness of adding the demand-side incentive on top of the supply-side incentive. To measure the impact of interventions, data were collected through service statistics and quality assessments conducted by an external higher-level body. Provider perspective on teamwork and motivation was obtained through surveys and client perspective on quality of care was gathered through exit interviews.

Study sites

Performance-based incentive was implemented in 12 public-sector health facilities from three districts. Four facilities from each district – one District Hospital\(^1\) and three Upazila Health Complexes\(^2\) – received the interventions. Among three intervention districts, two districts implemented Strategy I with incentives for both providers and poor mothers, while the other district tested Strategy II with provision of incentive for providers alone. Control site comprised of three facilities from another district.

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\(^1\) District Hospital, with 100-250 beds, covers 1-2 million population and serves as referral for Upazila Health Complexes.

\(^2\) Upazila Health Complex located at the sub-district level, with 31-50 beds, covers approximately 300,000 population.
KEY INTERVENTIONS

Establishing quality assurance mechanism

One of the key prerequisites for introducing P4P approach was to have a quality assurance system, which was developed at two levels.

Quality assessment was one of the essential activities of the project, upon which incentives were measured and provided to service providers. Individual Quality Assurance Group (QAG), an external monitoring body, was formed for each of the study facilities, consisting of an obstetrician, an anesthesiologist and a pediatrician from nearby higher-level facility and a representative from professional body, with the purpose to provide systematic visits to health facilities to accredit and assess. QAGs made quarterly visits to the facilities, reviewed performance and graded the facilities, and provided supportive feedback to providers to improve maternal health services. By following a standard tool, QAG members assessed the quality of relevant service units within the facility.

Within the facility, the maternal health team was divided into smaller teams or service units with the leadership mechanism at both facility and service unit levels in order to improve “internal monitoring system”. Quality Assurance Teams (QATs) were formed for the following units: emergency room, labor room, operation theater, autoclave room, female ward, child ward or newborn care corner, pharmacy, store, laboratory, antenatal and postnatal care corner, and family planning corner. For each of the QATs, a leader was nominated and given responsibility to coordinate the activities of the respective unit. Individual checklists were introduced for assessing the readiness of service units, with the aim to help the unit leaders to identify the gaps, shortages and requirements of a unit and take measures accordingly.

Introducing P4P approach

Conditional financial incentive was provided to motivate service providers at the institution level. The main thrust of introducing P4P approach was to increase institutional deliveries, where managers, direct and indirect providers related to maternal health services and administrative and support staff received incentive if the facility achieved or exceeded performance targets. Provider performance was linked with both quantity and quality of services.

Quarterly targets for maternal health services were set for the institution as a whole, which took into account both quantity and quality of services. Service providers received incentive quarterly for achieving the facility-based performance targets. Incentives payable to providers and staff were calculated on the basis of level of efforts; for instance, managers and direct service providers received full incentive and indirect service providers and administrative staff received half incentive, while for support staff it was either 50 or 100 percent.

Performance of a facility was measured using service statistics and QAG visit reports. QAG, an innovation of the P4P scheme, measured performance achievements and determined eligibility for incentive while the project implementing agency reimbursed incentive payment through a systematic financial reimbursement mechanism established for calculating, disbursing and verifying incentives. An audit firm validated the disbursement of fund and cross-checked the exposure of clients to the interventions.
Subsidizing consumer cost

At the strategy I sites, financial assistance in the form of coupons was provided to cover transportation and medicines for receiving maternal health services from intervention facilities, and also incidental costs relating to unforeseen expenses women incurred while staying at a facility.

DISCUSSIONS AND CONCLUSION

Feasibility of implementing performance incentives is measured in terms of increased volume and improved quality of maternal health services. Comparison across strategies and comparison sites indicates that payment for providers, with or without financing for clients, results in increased utilization of maternal health services.

Change in service volume. The increase in service volume was significantly higher at the intervention facilities relative to comparison facilities. Institutional deliveries increased by 114 and 32 percent in facilities under strategies I and II, respectively, relative to only 8 percent increase at the comparison facilities. Utilization of antenatal and postnatal care services increased significantly in intervention sites relative to comparison sites, but strategy I facilities registered higher increase than strategy II facilities. There was incremental, progressive increase in maternal health services, particularly institutional delivery during the project period which suggests further increase if such incentives continue.

Change in quality of care. The intervention facilities significantly improved quality of maternal health services measured on a 100 point scale, with an increase in quality score from 54 to 77 percent. The change was most striking in strategy I (50 percent) than strategy II facilities (28 percent), since the benchmark score of quality of care was significantly lower for strategy I facilities relative to strategy II facilities. Quality of care score was not measured in the comparison facilities. However, in a follow-up study, the difference between the scores was measured in which the strategy I and II facilities achieved significantly higher score relative to comparison facilities.

Among the service units, changes were especially noticeable in labor room, obstetric ward, autoclave room, antenatal and postnatal care corner, and family planning corner. P4P interventions helped improve the readiness of service units. Some of the important changes include: introducing antenatal care and postnatal care corners, breastfeeding corners, and post-operative room; installing toilets adjacent to the labor room; making sitting arrangements for attendants; and separating sick newborn care unit within the pediatric ward. Facilities that have achieved performance targets used partograph in almost all deliveries. Moreover, round-the-clock service provision, improved cleanliness, improved record keeping, and management of critical cases were some of the testimonies to the effective leadership and enhanced commitment of providers towards quality measures. There was increase in bed occupancy at the facilities, which is one of the key indicators of quality and round-the-clock availability of services.

Provider satisfaction. The provider survey indicated that the group work has become more structured in complying with guidelines – strategy I and II facilities are twice and six times, respectively, more likely to follow structured guidelines relative to the comparison facilities. Providers at intervention sites reported higher rate of reception of the supervisory feedback and recognition.
**Client satisfaction.** Overall client satisfaction was better at intervention sites relative to comparison sites. Client satisfaction was significantly higher at the strategy I relative to strategy II sites for the medicines being free-of-cost and not requiring extra monetary payment. Strategy II and comparison sites performed better in terms of providers’ behavior relative to strategy I sites.

**Incentive cost of maternal health services.** Incentive cost per maternal health service unit including antenatal care, institutional delivery and postnatal care services was US$ 8 for intervention facilities. Total incentive cost per unit of maternal health service unit was lower at the strategy II sites relative to the strategy I sites ($7 versus $9) because of higher number of service units delivered at strategy II relative to strategy I facilities while strategy I facilities incurred costs for coupons to poor clients.

All these findings demonstrate that facilities with sub-optimal performance tend to respond to the performance targets in terms of increasing quantity and quality of maternal health services if it is tied with incentives. Performance-based incentive mechanism proves to be an effective strategy to tackle issues related to service use and provider performance. In developing countries like Bangladesh, the need for implementing performance-based financing programs to meet MDGs and other health indicators is beyond argument. Specifically, such encouragement is required until certain level of institutional deliveries and improvement in maternal and newborn health are reached.