2012

Comparative Case Study

Mobile Medical Units
In Bihar and Madhya Pradesh

This is a comparative case study of the Mobile Medical Units (MMUs) being operated in Madhya Pradesh and Bihar through a public private partnership (PPP). The case focuses on understanding the monitoring and evaluation mechanisms of the program, and recommending measures to strengthen these mechanisms.

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1. Executive Summary

The past decade has seen the emergence of Public Private Partnerships (PPPs) in India as a strategy to meet the healthcare needs of the nation. Partnerships in the primary, secondary and tertiary sector involve multiple stakeholders and cover a range of health services. Given the increasing popularity of PPPs, there is a need to evaluate the impact and effectiveness of existing PPPs in order to strengthen them and to better equip and inform future PPPs.

Given this context, ACCESS Health International has undertaken a comparative case study of mobile medical units (MMUs) in Bihar and Madhya Pradesh with the objective of understanding and analyzing the functioning of the program. The case focuses on the monitoring and evaluation mechanisms of the program, and provides recommendations to strengthen these mechanisms. The case was developed through interviews with public and private partners, field visits, and secondary research.

The National Rural Health Mission (NRHM) has identified mobile medical units as a strategy for improving access to healthcare in remote rural areas. The units would cater to primary health care needs. These units could either be operated by the state governments on their own or in partnership with private providers.

The state of Bihar adopted the MMU scheme under the name “Arogya Rath” in 2009 with three private providers – Spake Systems, Jagran Solutions and Jain Studios. There are altogether 38 mobile medical units in the state, one for each district. The units provide primary health care services free of cost to people in underserved areas of the state. The private partners are responsible for providing infrastructure, manpower and services, and are given a target of serving at least 50 patients each day, operating for 26 days in a month.

The state of Madhya Pradesh had launched mobile medical units in the state as early as 1988-89 under a program called “Jeewan Jyoti Yojana” which was operated by the government itself. When the scheme was restructured according to NRHM guidelines and reintroduced in 2006 as “Deen Dayal Chalit Aspatal Yojana”, it was decided that private partners would be engaged to

provide services, in order to address issues of managerial constraints and high costs. Currently, 92 mobile units are under operation in the state, with one unit for each tribal block.

Both states used a competitive bidding process with weightage given to technical and financial aspects. The bidding process in Bihar was centralized, with the State Health Society Bihar (SHSB) issuing a single invitation to bid for all the districts. The bidding process in Madhya Pradesh was decentralized, with each District Health Society issuing invitations to bid for the blocks within that particular district only.

The mobile units used in Bihar are air-conditioned and equipped with an operating table and accompanying accessories as well as an x-ray room and processing unit. Each unit is manned by a staff of eight. The mobile units in Madhya Pradesh, which do not provide for these facilities, are manned by a staff of four. One of the biggest challenges that the private providers face is the high rate of attrition, caused by the difficult working conditions, constant travel and long hours.

The services provided in the units in Bihar and Madhya Pradesh remain the same, but for a few exceptions which cater to localized needs. The monthly payment for a unit in Bihar was INR 468,000 (USD 9,360 USD) versus INR 175,000 (USD 3,500 USD) for a unit in Madhya Pradesh. The cost per patient for the private provider was also significantly higher in Bihar (USD 6.18) than in Madhya Pradesh (USD 1.66). The average number of patients seen by a unit per visit in Bihar averaged to 126, whereas in Madhya Pradesh the average was 92.

Please refer to Annexure 1 for a quick summary of the two models.

The monitoring and evaluation component was not found to be very robust in either of the states. There was no separate budgetary allocation for monitoring and evaluation mechanisms in the contracts. The performance parameters listed in the contracts are not clearly defined. Moreover, the monitoring reports used do not capture the data required to measure performance on these parameters. Verification of the data collected is a further challenge, with no fraud control mechanisms in place. Finally, the focus so far has been on quantitative data only, while measurement of service quality has largely been ignored.

While a large amount of data is being collected in both states as part of the reporting process, there is no analysis of this data. In Bihar, though the contract provided for an evaluation six months into the program launch, no such evaluation has been conducted. In Madhya Pradesh, there is no provision in the contract for beneficiary feedback or for independent evaluations.

An effective monitoring and evaluation mechanism is invaluable in identifying gaps and strengthening the program for better performance. It is recommended that the NRHM guidelines should provide guidance to the states on designing monitoring and evaluation mechanisms for the MMU program. The program must provide for a separate budgetary allocation for the monitoring and evaluation component to ensure that it does not get neglected.

The performance parameters need to be clearly defined in the contract, with provision for including service quality parameters. States must develop reporting and monitoring systems that capture appropriate data to measure performance against agreed upon parameters. Both public and private partners need to put in fraud control mechanisms in order to ensure the accuracy of the data. It is also recommended that the states make provision for regular third party evaluations to be conducted in order to assess the program performance.

Mobile medical units have reached out to hundreds of villages and millions of beneficiaries since the start of their operations. Yet there are many challenges to their effective functioning. Providers face many operational challenges on a daily basis – ensuring staff presence, ensuring adequate drug supply, dealing with contingencies, etc. For state governments, ensuring private provider performance through effective monitoring and evaluation is a major challenge.

The Government of India, through the NRHM, has a role to play in strengthening the program. However, it is the state governments that have to undertake a stewardship role – designing and developing the program, adapting it to meet local needs, monitoring private providers to ensure performance, evaluating the program at periodic intervals to make course corrections where necessary, and supporting local government authorities as well as the private partners in all ways possible to ensure the success of the program.

2. Introduction

Program Background

Access to health care and equitable distribution of health services are fundamental requirements for achieving the Millennium Development Goals and the goals set under the National Rural Health Mission (NRHM) launched by the Government of India in April 2005. Many areas in the country, predominantly tribal and hilly areas, even in well-developed states, lack basic health care infrastructure, thus limiting access to health services. Over the years, various initiatives have been taken to overcome this obstacle, and the results have been mixed.

The NRHM has identified Mobile Medical Units (MMUs) as a strategy for improving access. The principle behind MMUs is to reach underserved areas by taking healthcare to the doorstep of the people. The units would primarily cater to primary health care needs. Many states and Non Governmental Organizations (NGOs) have successfully started operating mobile medical units.

According to NRHM guidelines, in order to run an MMU program, the state governments have to first map medically underserved areas and publically notify them. Once this activity is completed, each district will initially be provided with one mobile medical unit. The number of MMUs per district may be increased if a large number of underserved areas were notified within that district. This was proposed for 595 districts across the country.

Each district is to have two vehicles – one equipped as a clinic with appropriate diagnostic facilities and another for transporting staff. For states with difficult terrain, such as Himachal Pradesh, Jammu & Kashmir, and the north-eastern states, these vans will have additional facilities such as X-ray, ultra-sonography and electrocardiography (ECG)[1].

The states have the option of providing the services by themselves or by contracting private parties. The states are required to involve the District Health Society (DHS)/ Rogi Kalyan Samiti/NGOs in deciding the appropriate mode of operating the MMUs. If the state decides to

[1] 'Guidelines for the Operationalisation of Mobile Medical Units (in North-eastern States, Himachal Pradesh and Jammu & Kashmir)', Ministry of Health and Family Welfare, Government of India

run the program as a public private partnership, NRHM would allocate additional budget for MMU staff.

The NRHM guidelines also calculated the capital cost and recurring costs that the mobile units were expected to incur. The states were given the flexibility to work out the number of vans required and unit costs were developed in consultation with each state.

Table 1: NRHM Budgetary Guidelines for MMUs

Item	Estimates annual cost per unit
Mobile unit with basic accessories (basic unit)	INR 1,825,000 (36,500 USD)
Mobile unit with diagnostic facilities – ECG, USG and X-ray	INR 2,375,000 (47,500 USD)
Cost of staff per annum per van	INR 700,000 (14,000 USD)
Recurring cost for basic mobile unit	INR 1,987,000 (39,740 USD)

Source: Ministry of Health and Family Welfare, Government of India

Methodology

This report has been developed based on analysis of both primary and secondary data. For the purpose of primary data collection, we approached both the public sector and the private sector partners. For the private sector perspective, we approached Jagran Solutions, since they had served in both Madhya Pradesh and Bihar, and conducted an interview with the Associate Business Head of Jagran Solutions. For the public sector perspective, we approached the State Health Society (SHS) as well as various government officials in both the states.

In Bihar, primary data was collected from both Jagran Solutions as well as from the State Health Society Bihar. ACCESS Health conducted an interview with the State Program Officer, State Health Society Bihar. We were also able to undertake a field visit and observe the Arogya Rath

program in action. Secondary data was collected from the website of the State Health Society, Government of Bihar (www.statehealthsocietybihar.org) as well as from other websites.

For Madhya Pradesh, the source of primary data was the private provider, Jagran Solutions. The secondary data (including financing details, monitoring formats, and service data) was collected from the website of the Department of Public Health and Family Welfare, Government of Madhya Pradesh (http://www.mp.gov.in/health/mobile-clinic.htm).

3. *Arogya Rath*, Bihar

Program Background

The state of Bihar has an area of 94,163 square kilometers, making it equivalent to a country the size of the United Kingdom. It consists of 9 divisions, 38 districts, 101 sub divisions, 533 blocks and 45,098 villages[2] and is home to 82.9 million people. Bihar has traditionally been an under-developed state, lagging behind the rest of the country in many socio-economic and health indicators.

Table 2: Socio-economic and Health Profile of Bihar

Item	Bihar	India
Total population (Census 2001) (in million)	82.9	1028.61
Decadal Growth (Census 2001) (%)	NA	21.54
Crude Birth Rate (SRS 2008)	28.9	22.8
Crude Death Rate (SRS 2008)	7.3	7.4
Total Fertility Rate (SRS 2007)	3.9	2.6
Infant Mortality Rate (SRS 2008)	56	53
Maternal Mortality Ratio (SRS 2004 - 2006)	312	254
Sex Ratio (Census 2001)	919	933
Population below Poverty line (%)	42.60	26.10
Schedule Caste population (in million)	13.05	166.64
Schedule Tribe population (in million)	0.76	84.33
Female Literacy Rate (Census 2001) (%)	33.1	53.7

Source: Ministry of Health and Family Welfare, Government of India

The alarming health status of Bihar may be attributed to weak infrastructure, inadequate healthcare facilities, acute shortage of personnel and a poor communication network. The table below gives a glimpse of the shortage of facilities and manpower in the state as of March 2008. Moreover, frequent natural calamities such as floods and droughts added a further strain to the already weak resources, and led to worsening living conditions. All these factors were compounded by the high levels of poverty and low literacy in the state.

[2] Ministry of Health and Family Welfare, Government of India

Table 3: Health Infrastructure in Bihar (2008)

Item	Required	In position	Shortfall (%)
Sub-centre	14,959	8,858	41%
Primary Health Centre	2,489	1,776	29%
Community Health Centre	622	70	89%
Multipurpose worker (Female)/ANM	10,634	9,127	14%
Health Worker (Male) MPW(M) at Sub Centers	8,858	1,074	88%
Health Assistant (Female)/LHV at PHCs	1,776	479	73%
Health Assistant (Male) at PHCs	1,776	634	64%
Doctor at PHCs	1,776	1,565	12%
Obstetricians & Gynecologists at CHCs	70	21	70%
Physicians at CHCs	70	38	46%
Pediatricians at CHCs	70	17	76%
Total specialists at CHCs	280	104	63%
Radiographers	70	15	79%
Pharmacist	1,846	439	76%
Laboratory Technicians	1,846	135	93%
Nurse/Midwife	2,266	1,425	37%

Source: Rural Health Statistics Bulletin, March 2008, Ministry of Health and Family Welfare, Government of India

Given this context, Bihar was certainly in need of the Mobile Medical Units proposed by the NRHM, to improve access to primary health care facilities in the state. Given that the limited resources in the state were already under enormous strain, the Government of Bihar (GoB) decided to implement the MMU program on a public-private partnership basis.

Program Summary

The Mobile Medical Unit initiative is called 'Arogya Rath' in Bihar. The model runs across all 38 districts in the state. Three private organizations have been selected to run the MMUs: Spake Systems3 (in 14 districts), Jagran Solutions (in 12 districts) and Jain Studios (in 12 districts). The distribution of districts by private partner has been illustrated in Annexure 2. The scheme was launched on 13th July 2009 by the Chief Minister of Bihar. The existing partnership is for a three year period, from July 2009 to July 2012.

[3] The contract with Spake Systems has been terminated due to non-performance by the private provider

The objective of the MMU program is to "provide regular, accessible, and quality primary health care services to the farthest areas in the districts of Bihar and to provide a visible face for the mission and the government; also establishing the concept of 'healthy living' among the rural masses"[4].

Figure 1: A Mobile Medical Unit in Bihar

In order to ensure that the program meets its objective of reaching out to the poor in all the districts of Bihar, the state has provided for one mobile van per district, which will travel across the district and provide easy access to primary healthcare facilities. Priority will be given to underserved areas so that those with limited access to healthcare facilities can benefit from this program. The private providers are given a target of serving at least 50 patients each day, and operating for 26 days in a month.

The mobile health units target the poor living in far flung rural areas with limited healthcare facilities. However, the MMUs are inclusive - open to all the residents of the village being visited. Apart from the 38 mobile vans for each district of the state, the Government of Bihar has also contracted private providers to operate additional vans specifically to serve the Scheduled Castes and Scheduled Tribes (SC/ST). These vans, operating under the name 'Dhanvantri Rath', serve villages with a high SC/ST population.

A high degree of coordination is required between the private providers and the respective District Health Society (DHS) in order to ensure that the MMUs reach the target audience. The route map for each van is drawn by the private provider in close coordination with the DHS to ensure that the underserved villages in each district are prioritized.

[4] "PPP Initiatives in the State", State Health Society Bihar, Government of Bihar

Both the public and private partners take responsibility to inform and mobilize the public about the mobile van visits. Typically, a day or two before the visit, the DHS/ private providers inform the Medical Officer In-Charge (MOIC) of the concerned Primary Health Center (PHC) as well as the Accredited Social Health Activist (ASHA)5 workers and the Anganwadi workers[6] of the village, so that they can in turn inform the local population of the scheduled MMU visit.

The State Health Society Bihar (SHSB) is the key public partner for the MMU initiative. SHS was responsible for designing the program using the NRHM guidelines, identifying the criteria for selection, designing the bid documents and managing the bidding process. However, once the bidding process was completed, the key public partners are the District Health Societies – they are the signatories to the contract with the private firms, and they are responsible for implementation and review and monitoring of the contract, with support from SHSB.

Program Details

Infrastructure: The Mobile Medical Units in Bihar are customized TATA 709 vehicles which are fully air-conditioned and equipped with Global Positioning Systems. The vans have been designed according to private provider specifications, taking into consideration factors such as ease of deployment, space for privacy, and cost. The vans display the GoB and SHSB logos as well as key health messages, thus serving as the visible face of SHSB and NRHM in the state.

The private partners are also expected to provide a TATA Sumo/Mahindra Bolero/other vehicle of equivalent specification for the purpose of transporting the MMU staff. In areas with difficult terrain which cannot be reached by the TATA 709, the TATA Sumo is taken carrying basic staff, medical equipment and drugs. The Sumo may also be used as an ambulance for transporting patients in case of an emergency.

[5] Accredited Social Health Activists (ASHAs) are community health workers instituted by the Government of India's Ministry of Health and Family Welfare (MoHFW) as part of the National Rural Health Mission (NRHM)

[6] Anganwadi worker is a health worker chosen from the community and given 4 months training in health, nutrition and child-care and in charge of an Angwadi center under the integrated child development services (ICDS)

Figure 2: Equipment in a Mobile Medical Unit

The MMUs are equipped with the following facilities: X ray machine and processing lab, ECG, Operation Theatre (OT) table with standard accessories, dressing trolley and instruments, oxygen cylinder, suction machine, ophthalmoscope, refraction set, semi auto-analyzer, centrifugal machine, hemoglobin meter, glucometer, autoclave, incubator, urine analyzer, vaccine carrier, weighing machines for adults and infants, stethoscope, BP instrument, suture removal kit, pregnancy test kit, Intra Uterine Device (IUD) insertion kit, starter regent kit, HIV testing kit, general instrument kit, first aid kit, various other test and surgery kits, microscope, television, generator set, screen, stretcher, stools, mobile light/ceiling light/OT light, normal ambulance accessories such as foldable furniture, waste basket, linen, mattress, mackintosh sheets, fire extinguisher etc.

Services: The following services are provided by the MMU:

- General outpatient consulting
- Gynecology clinic; Antenatal and postnatal care
- Infant and child care including immunization and provision of Vitamin A supplements
- Adolescent reproductive health
- Diagnosis and referral for non- communicable diseases (cardiac, hypertension, etc.)
- Eye examination; ENT examination
- Other services like treatment of minor injuries and burns, aseptic dressing, TT immunization, treatment of minor burns, minor suturing and removal etc.

- Prophylaxis and treatment of anemia with IFA Tablets
- Promotion of contraceptive services including IUD insertion
- HIV testing
- Minor lab investigations; Pathology services; Radiology services (X-ray)
- Free dispensation of drugs which are under the Essential Drug List prescribed by GoB[7]
- Emergency services during epidemics and disasters
- Network and referral between PHC/CHC/private clinics
- IEC (Information Education Communication) activities such as counseling, screenings to encourage positive health practices, health awareness programs, information dissemination about health, hygiene and diseases. Audio-visual related to this to be played for at least 30 minutes every day.
- Generating health indicators and monitoring behavioral changes
- Medical camps when such a need occurs

Human Resources: The MMUs in Bihar are accompanied by a staff of eight:

- 2 drivers (one for the van and one for the Sumo)
- 1 doctor
- 1 Auxiliary Nurse Midwife (ANM)
- 1 laboratory attendant
- 1 pharmacist
- 1 OT assistant
- 1 x-ray technician
- There is also one supervisor for each district in Bihar

[7] Provided in Annexure 3

The staff, though hired by Jagran Solutions, is on the payrolls of a Human Resources (HR) consulting firm. Jagran pays them a nominal fee for each staff member. The high rate of attrition among MMU staff necessitates this – given that Jagran Solutions is a small team itself, it is easier for the HR consulting firm to take care of the administrative aspects of the staff. However, hiring responsibility is held completely by Jagran Solutions. Therefore, none of the MMU staff, except the supervisors, are on Jagrans' payrolls.

There is an effort to recruit doctors who are from the local area as this would likely bring down attrition. There is also an effort to hire female doctors, but this is much more difficult. Fifty percent of the MMU doctors are retired government doctors – and they have a much higher chance of staying on as opposed to young doctors, among whom the attrition rate is very high.

Figure 3: MMU Staff in Bihar

Finances: The amount of INR 468,000 (USD 9,360) per month is paid to each MMU and includes the cost of medicines and all consumables. One month's payment is made to the private partner as mobilization advance at the time of initialization of the unit – this advance is adjusted against the next ten installments.

50 percent of the monthly contract amount is paid as advance to the provider within the first week of each month. The remaining 50 percent is paid once the bills are submitted at the end of the month. Payment is to be made by the DHS within 30 days of submission of the bills. In case of delays in payment, the private provider can escalate the matter to the State Health Society Bihar. SHSB must then ensure that the payment is made within 15 days of such escalation.

Operations: The MMU are operational six days a week, 26 days a month. The Block Medical Officer (BMO) is informed ahead of the schedule – when the van is expected to arrive at a particular village in the block. The BMO then informs the village panchayat, the anganwadi worker and the ASHA worker. The Jagran team (usually the supervisor) also informs the ASHA worker directly by contacting her on her mobile phone.

According to the agreement, the MMUs are supposed to screen not less than 50 patients per visit. In practice, the MMUs examine an average of about 126 patients a day. This indicates that the cost per patient to the government comes to INR 309 (USD 6.18)[8]. (Annexure 4)

[8] The cost per patient of INR 309 is calculated based on beneficiary data received from Jagran Solutions. Therefore, this cost is valid only for units operated by Jagran Solutions in Bihar. The cost per patients for units operated by the other private providers is not known.

4. *Deen Dayal Chalit Aspatal*, Madhya Pradesh

Background

Madhya Pradesh (MP) is the second largest state in India with an area of 308,245 sq. km., making it equivalent to a country the size of Poland. There are 50 districts, 313 blocks and 55393 villages. The state has a population of 60.35 million and a population density of 195 per sq. km. (as against the national average of 312).

Table 4: Socio-economic and Health Profile of Madhya Pradesh

Item	Madhya Pradesh	India
Total population (Census 2001) (in million)	60.35	1028.61
Decadal Growth (Census 2001) (%)	NA	21.54
Crude Birth Rate (SRS 2007)	28.5	23.1
Crude Death Rate (SRS 2007)	8.7	7.4
Total Fertility Rate (SRS 2007)	3.4	2.7
Infant Mortality Rate (SRS 2007)	72	55
Maternal Mortality Ratio (SRS 2004 - 2006)	335	254
Sex Ratio (Census 2001)	919	933
Population below Poverty line (%)	37.43	26.1
Schedule Caste population (in million)	9.6	166.64
Schedule Tribe population (in million)	12.23	84.33
Female Literacy Rate (Census 2001) (%)	50.3	53.7

Source: Ministry of Health and Family Welfare, Government of India

The public health system is characterized by poor coverage and poor quality of services due to lack of personnel, poor resource availability and low accountability. MP has a large tribal population, majority of who reside in eight tribal districts. These tribal districts are characterized by extreme poverty (more than 57 percent of tribal population is poor), remoteness, inaccessibility and extremely weak public health infrastructure. The health outcomes in these areas are, understandably, very poor compared to other regions and groups:

- Child Mortality Rate was 87 for Scheduled Tribe (ST) children as compared to 57 for the state (National Family Health Survey (NFHS) 2)).

- Total Fertility Rate was 3.9 for SC, 3.7 for ST against 3.3 for the state (NFHS 2).
- More than 70 percent ST women were anemic as compared to 54 percent for the state (NFHS 2).
- Sixty percent of ST children were anemic as compared to fifty one for the state (NFHS 2).
- Ninety one percent tribal women delivered at home as compared to 78 percent for the state as a whole.

Table 5: Health Infrastructure in Madhya Pradesh (2008)

Item	Required	In Position	Shortfall (%)
Sub-centre	10402	8834	15
Primary Health Centre	1670	1149	31
Community Health Centre	417	270	35
Multipurpose worker (Female)/ANM	9983	8718	13
Health Worker (Male) MPW(M) at Sub Centers	8834	4030	54
Health Assistant (Female)/LHV at PHCs	1149	741	36
Health Assistant (Male) at PHCs	1149	495	57
Doctor at PHCs	1149	1042	9
Obstetricians & Gynecologists at CHCs	270	53	80
Physicians at CHCs	270	51	81
Pediatricians at CHCs	270	66	76
Total specialists at CHCs	1080	220	80
Radiographers	270	162	40
Pharmacist	1419	603	58
Laboratory Technicians	1419	491	65
Nurse/Midwife	3039	901	70

Source: Rural Health Statistics Bulletin, March 2008, Ministry of Health and Family Welfare, Government of India

Given this context, Mobile Medical Units certainly address some of the gaps in access, especially in remote places.

Jeewan Jyothi Yojana

Mobile medical units were not new to Madhya Pradesh. They were in existence since 1988-89 under the scheme *Jeewan Jyothi Yojana*. This was sponsored by the central government. These units were equipped with minor operation theater, operation table and light, oxygen cylinder, running water facility, generator and an inverter. The 49 mobile health units were intended to provide basic health care services to the inaccessible areas and disadvantaged population mainly the tribal population on village market days *("Haat Bazaar").* Due to managerial constraints and recurring costs, it was decided that a private partner would be engaged to provide services. In 2006, the government of Madhya Pradesh issued tenders inviting private partners for delivering health care services. By this time, mobile health units were also part of NRHM strategy and budgets were allocated for them to execute in PPP mode.

Deen Dayal Chalit Aspatal

Figure 4: Villagers Waiting at an MMU

As before the main objective of the program remained the same - delivering quality health care services to the scheduled caste and tribal people living in remote areas for free. The program was executed in a phased manner. Eleven vans were operational in 2006-07 and 82 were added in the following year of which one was later terminated. One mobile has been provided for one tribal block and are 92 in total[9]. The agreements were signed on 23rd June 2007 and operations were to being on 15th July 2007 for the second phase.

Jagran Solutions were entrusted with fourteen blocks in three districts in the second phase (Betul, Badwani and Dhar). These vans are operational for 26 days in a month during which they covered the village markets and villages providing curative, preventive and promotive services.

[9] "About Mobile Health Clinics", Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

Bidding Process[10]

The interested parties were to submit two bids – technical and financial bid in separate enclosures to the family welfare office. All the bids were submitted at the district level. The financial bid was considered only if the technical bid met with the criteria laid down. Failure of the technical bid to meet with the criteria would lead to elimination of the private partner. Criteria for selection:

- The private partner's registration had to be valid for three years from the date of signing the agreement.
- It was mandatory for the participant bidder to have three years of experience in health services provision (consultation, counseling, treatment or delivering of centrally sponsored programs) including 2 years in the rural regions.
- The minimum turnover for the past three years had to be INR 1,000,000 (20000 USD) and the participant bidders should have assets worth at least INR 500,000 (10000 USD).

Along with the technical bid, a demand draft of INR 20, 000 (4000 USD) towards Earnest Money Deposit (EMD) that was refundable on selection. The money would be refunded if the bidder was not awarded the tender or if awarded, once the bank guarantee is paid and agreement signed. The EMD would not be refunded in cases whereby the participating bidder was not in a position to provide the mentioned services or modifies the offer or withdraws the bid. For a selected private partner, delay in submission of remaining documents or provision of a bank guarantee would lead to non-refund of EMD.

On selection, the participant bidder had to provide a bank guarantee of INR 200,000 (40000 USD) to the government valid for three years. Each bidder would be allotted blocks with maximum limit of 14 blocks. For an existing private partner there could be increment of blocks again limited to a maximum of 14. The selected partners could not encroach on another partners' catchment area at any time.

[10] "Guidelines and TOR", Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

The contract was to be terminated on non-provision of services for a continuous of ten days or if not begun within ten days of the agreed date. In this event, if the district official feels appropriate, another partner is contracted to provide services. Any expense involved in this activity would then have to be paid for by the previous partner.

In case of non compliance to the agreement, a notice would be issued to the private partner. The private partner would have to justify its position within a week. If the partner is unable to do so within the specific time period, legal action would be taken against by the concerned district collector. The private partner has the right to appeal on the judgment within thirty days. During this period (of seven days or thirty days), the district has the freedom to arrange for a service provider to avoid discontinuation. The money for such activity would be deducted from the previous provider.

Any debate regarding the agreement would be resolved in the district courts of Madhya Pradesh. Each party also has the right to terminate the services with a notice period of three months.

Twenty four bidders applied out of which eleven were selected to provide the MMU services (Annexure 5).

Program Details[11]

Jagran Solutions was, among the eleven providers selected for the provision of mobile healthcare services. They were awarded fourteen blocks together in districts of Badwani, Betul and Dhar from July 2007 to April 2011[12]

Infrastructure: As per the Madhya Pradesh government, the private partner was to provide a Tata 407, Swaraj Majda, Eicher or force motors (city line) as a mobile unit. Jagran Solutions used a Tata 407 for this purpose. These vehicles were equipped with a GPS which was monitored by the state government. The NRHM and Ministry of Health and Family Welfare (MoHFW) logos

[11] "Guidelines and TOR", Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012
[12] Conversation with Jagran Solutions in charge of MMU

were prominently displayed on the exterior of the vehicle. The procurement and maintenance of the vehicle including fuel were the responsibility of the private provider.

The interior of the vehicle was divided to provide space for patient examination and accommodating the equipments. The vehicle was equipped with basic clinical equipment for primary care service provision.

Services: The MMUs were supposed to provide maternal and child health services such as ante natal care, post natal care, immunization and treatment for malnourishment in children, family planning services, sexual health for adolescent girls, malaria and tuberculosis screening, health education and dissemination of other public welfare programs of the state government. The curative services also include general consultation with drug dispensing and appropriate referrals. Basic blood investigations are carried out in the mobile unit.

Figure 5: Drugs Stocked in an MMU

Appropriate equipment for the provision of the services was available (Annexure 6). The procurement and maintenance of the equipment was again the responsibility of the private partner. In addition, they also had to ensure the availability of the drugs on the essential drug list of a primary health center.

The MMU also housed the tools for the promotive services such as audio visual equipment, white board and other relevant material. The mobile unit was mandated to provide two thirty minutes each capsules on health education on topics issued by the health department. This was to be disseminated either at village markets or other such prominent places. The material for the health education was provided by the concerned district authorities. Any information beyond that which was provided for required approval from the concerned district's Chief Medical and Health Officer (CM&HO).

Along with equipments, the MMUs were to have list of the drugs present, an inventory list and the technical details of the vehicle. Certain drugs were provided by the state government and the rest to be procured by the private partner. Initially, the drugs provided by the state government, were given to the private partner for three months. For additional requirements, the private providers could indent a month in advance. Records of these were required to be maintained. The drugs were to be provided free of cost to the patients.

These units could not provide any other services apart from those already mentioned in the agreement.

Human resources: The recruitment of the personnel for the MMU was the responsibility of the private partner but the details of each person were sent to the government. Any change in personnel was allowed only if the government was previously informed. The management of the personnel including salaries was the responsibility of the private partner. Each van would house one doctor, a nurse, pharmacist, and a driver. In addition, there were two supervisors per district to coordinate the activities.

The details of the people employed had to be sent to the block medical officer and the concerned district medical officer. The details included name, address, date of birth, qualification and supporting documents for qualifications. The driver's license details were also to be submitted. A copy of acceptance of the appointment letter was submitted to the directorate of public health and family welfare and the concerned district chief medical and health officer. All the employees of the unit were to possess identity cards issued by the directorate. No person, apart from whose details were submitted was allowed to work in the mobile unit.

Finances[13]: For receipt of payments, the private partner would need to submit the activities report and the bills on a monthly basis to the district official. In turn, the district health official would pay the partner 1/6th of the agreed amount every two months. It was required of the

[13] Agreement between Jagran and CM&HO, Badwani district

private partner to submit all the financial bills and monthly activities by 3rd of the consequent month to the chief medical and health officer (CM&HO).

The private provider would be paid by the government an advance of two months in the beginning of the contract which would be adjusted against last two months of the agreement period. This amount was paid from the reproductive and child health flexi pool fund[14]. Any incentive was paid separately (Annexure 7).

Operations: The MMU were to be operational six days a week. In a year, they were allowed nine holidays excluding Sundays. The route chart was prepared by the CM&HO and handed over to Jagran. The route maps for the following month was prepared in the third week of the previous month (Annexure 8). These charts were so designed that each venue was visited at least once a week. Prior to submission of a copy of the route chart, it was required to discuss with the district collector on the appropriateness of the route and ensure there were no hindrances. No change of plans was entertained unless there was a genuine reason or natural disaster. Such changes were made twenty four hours prior to the schedules date. These units were stationed for eight hours in the decided location on any visit. The Block Medical Officer (BMO) was informed ahead of the schedule – when the van was expected to arrive at a particular village in the block. The BMO then informed the village panchayat, the Anganwadi Worker and the Accredited Social Health Activist (ASHA) worker. The Jagran team (usually the supervisor) also informed the ASHA worker directly by contacting over her mobile phone.

The MMUs were supposed to screen not less than seventy five patients per visit, provide ante natal care to at least 300 pregnant women and screen at least fifty patients per month for malaria and tuberculosis. For promotional activity, two slots of half an hour each were to be dedicated to health education.

In practice, Jagran examined 92 patients per day on an average. This indicates that the cost per patient to the government for Jagran comes to INR 83 (1.66 USD) versus the cost to the

[14] "Circulars", Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

government for the entire program at INR 51 (1 USD). Also, the targeted number of women for ante natal care was 300 per month which translates to 3600 annually. Jagran in the year 2008-09[15] provided care only to 2979 pregnant women (Annexure 9).

[15] The data for 2008-09 has been used for calculations as this data is available for the entire 12 month period.

5. Analysis

Need for MMU

The National Rural Health Mission conceptualized the idea of Mobile Medical Units with the objective of providing access to primary healthcare to those living in remote areas. In both Madhya Pradesh and Bihar, the infrastructure and resources available to the state to meet the primary health care needs of its people fall far short of the prescribed norms, necessitating the introduction of innovative methods (such as mobile medical units) to supplement the existing primary health care structure.

In terms of the number of PHCs actually in position as against the number required according to population norms, Madhya Pradesh has a shortfall of 31% and Bihar has a shortfall of 29%[16]. Often, PHCs may be in position but are not fully functionally due to a shortage of equipment or human resources. Even where fully functional PHCs are present, they may not be able to extend their reach to certain sections of the population living in more remote areas because of various reasons such as difficult terrain, lack of transportation etc. Given this context, the concept of mobile medical units was a considered a viable solution to the problem of healthcare access in these states.

Madhya Pradesh introduced MMUs in the state in 1988 under the name *Jeewan Jyoti Yojana*. Under this scheme, 39 units were mobilized to improve health services to tribal areas during '*Haat-bazaar*' days. In 2003, ten more MMUs were added in the state, equipped with facilities to conduct minor surgical interventions. The state's experience of running MMUs on its own wasn't very positive – it required intensive management inputs, sustained provision of POL (Petroleum, Oil and Lubricants), maintenance of staff, and provision of drugs. Considering the difficulties faced by the state in running the *Jeewan Jyoti Yojana* by itself, the Government of Madhya Pradesh decided to restructure the scheme, involve the private sector, and introduced it as *Deendayal Chalit Aspatal* in May 2006.

[16] Rural Health Statistics Bulletin, March 2008, Ministry of Health and Family Welfare, Government of India

Bihar introduced MMUs in the state in 2009 under a program named *'Arogya Rath'*. Given the acute shortage of staff at the primary health care level across the state, the government felt that it would not be feasible to run the scheme on its own and decided instead to involve the private sector and run it as a public-private partnership, as was being done in Madhya Pradesh.

Contracting Process

Both Madhya Pradesh and Bihar used competitive bidding processes to select the private providers. In Madhya Pradesh, bidders had to submit both technical and financial bids at the same time but in separately sealed envelopes; the financial bid was opened only if the technical bid satisfied the selection criteria. In Bihar, private organizations were invited to submit an Expression of Interest and make a power-point presentation; based on the presentation, all technically qualified parties were invited to submit financial bids.

The bidding process in Madhya Pradesh took place at the district level: each District Health Society received and evaluated the bids, selected the partners for that particular district and signed the contract. Each district had multiple partners, with each partner catering to selected blocks within the district (Annexure 5). This system placed a strain on the DHS because each DHS had to manage multiple providers, handle operational issues, and monitor the performance of all these providers.

In Bihar, the process was more centralized with the State Health Society undertaking the responsibility for designing the bid documents, identifying selection criteria, receiving and evaluating the bids, and selecting the providers, though the contract was signed with the District Health Society for each district.

The centralized bidding process may have been more efficient since it uses fewer resources and takes lesser effort to select private partners for all the districts through this process. The decentralized process, on the other hand, has to repeat the same process for each district, thus replicating the effort and spending more time and resources. Moreover, when private providers are able to bid for more than one district, they achieve economies of scale, and these savings enable them to present a more competitive financial bid.

Selection criteria based on financial capacity of the organization can influence the number of bidders bidding and also dependant on extent of services. In Bihar, since the private partner should have been capable of providing services to all the districts in the state, the selection criteria called for an organization with a minimum annual average turnover of INR 100,000,000 (2,000,000 USD) in the last three years, resulting in applications from only six bidders. On the other hand, Madhya Pradesh called for organizations with a minimum annual average turnover of INR 1,000,000 (20000 USD) in the last three years, and owning assets worth at least INR 500,000 (1000 USD), resulting in applications from 24 bidders.

States should consider adopting a centralized bidding process when it is for a statewide program – this will use fewer resources and bring down the cost of tendering, while ensuring that uniformity is maintained across the state. In some cases, District Health Societies may not be equipped to conduct the bidding process, and a state level process would address this issue. Contract management and monitoring can happen at the district level, with support from the state government.

Since Madhya Pradesh and Bihar were two of the first few states to run MMUs in PPP mode, their selection criteria were necessarily limited – but as PPP becomes an increasingly common approach for running MMUs, it will become important to look at the capability of the private partner in providing such services.

Program Details

Infrastructure: In Madhya Pradesh, one of the private partners, Jagran Solutions, used a customized TATA 407 equipped with GPS as the mobile unit. The cost to the private provider in procuring and refurbishing the unit was INR 1,800,000 (36000 USD). In Bihar, Jagran Solutions uses a customized air-conditioned TATA 709 equipped with GPS as the mobile unit. The cost to the private provider in procuring and refurbishing the unit was INR 3,500,000 (70000 USD). The different models meet the differing needs of both the programs – the TATA 709 is larger and has the space for a small X-ray room and processing unit, as well as for an operating table and accompanying accessories, equipment which are not required for the in Madhya Pradesh model and hence a smaller TATA 407 was sufficient.

In Madhya Pradesh, the staff travels in the mobile unit. In Bihar, however, the staff travels separately in a TATA Sumo since all of them don't fit comfortably in the mobile van. An advantage of having a separate staff vehicle along is that it can be used to carry basic staff and medicines to areas which the TATA 709 has difficulty accessing, and can also be used as an ambulance in the case of emergencies. However, the cost of running two vehicles increases the fuel cost incurred, and contributes to the overall higher cost per unit in Bihar.

Human Resources: The four member staff in Madhya Pradesh consists of one doctor, one nurse, one pharmacist, and one driver. In Bihar, this staff is augmented by one laboratory attendant, one OT assistant, one X-ray technician and a second driver (for the staff vehicle), bringing the staff count to eight.

Two supervisors are in charge of the overall supervision in each district in Madhya Pradesh. In Bihar one supervisor is assigned to each district. The supervisor is responsible for coordinating with the DHS and other district level authorities as well as with the village level functionaries to ensure the smooth functioning of the program. He is also responsible for procuring drugs and maintaining drugs supply for the mobile units under his supervision. The supervisor essentially functions as the key liaison between the mobile units in the districts and the headquarters in the state capital.

In both the states, staff responsibility lies completely with the private provider, though the private providers are expected to furnish the government partner with details of the staff. The government does not mention any minimum qualifications for staff members. While it is important that the private provider is given the flexibility to take all staff related decisions, there is also a need to ensure that the recruited staff are adequately skilled and qualified. It is therefore recommended the government provides guidelines on the qualifications and experience required for staff recruited for the MMUs, in order to ensure service quality.

In the case of Jagran Solutions, all the hiring decisions are taken by the firm. However, for the sake of administrative ease and efficiency, all the MMU staff members, except the supervisors, are placed on the rolls of an external HR agency.

One of the biggest challenges that the private providers face in running MMUs is in terms of retaining staff. As private organizations, they have no restrictions on staff salaries, and are in a position where they can offer competitive salaries in order to hire and retain staff. Despite this, staff attrition is very high because of the difficult nature of the job, with the constant travel and long hours. The attrition rate is highest for doctors and pharmacists, since they easily find jobs elsewhere.

Jagran Solutions tries to recruit staff from the region in order to increase the chances of retaining them. It has also realized that young doctors tend to move quickly to other jobs, preferably in urban areas, and are the hardest to retain. Therefore, over 50 percent of the doctors in the vans operated by Jagran Solutions are retired government doctors. While Jagran Solutions encourages female doctors to work in the vans, not many female doctors have expressed interest in working in such conditions. This is a disadvantage as reproductive health services form the major bulk.

The challenge of retaining the staff is much more difficult in Bihar because there is only one van per district. While the staff vehicle is supposed to return the staff to district headquarters at the end of the day, this isn't always the case. When traveling to villages which are far off from the district headquarters, the staff may end up staying at guest houses in the villages they are visiting, instead of returning to their homes. Even when they do return to the district headquarters, they are subjected to a significant amount of travel every day.

In MP, since each mobile van serves only one block, the staff typically does not travel as much as in Bihar and manages to return home at the end of the day. However, the manpower requirement is higher in Madhya Pradesh because it has many more vans; moreover, meeting the ideal of finding local staff in each block is a challenge.

Services: The services of the mobile unit are sufficient for primary care if provided regularly and adequate resources available. The services provided in Bihar and Madhya Pradesh remain the same but for a few exceptions which cater to localized needs. In Madhya Pradesh, malaria and tuberculosis screening have been made mandatory as they are endemic to the region. In Bihar, HIV/AIDs screening is part of the services. In addition, there is also a provision for X-ray and minor surgical procedures, ophthalmic examination, ear, nose and throat (ENT) examination. The latter two are coordinated with the local primary health center for specialists' doctors.

The use of minor operation theater and x-ray in mobile units in Bihar does not seem necessary. However, given that the state does not collect information on the type of procedures done in the operation theatre, it is difficult to objectively assess the utility of this facility in the mobile unit. Assuming that the minor operation theatre would be used mostly for dressing of wounds or treatment of minor injuries, these services can be adequately provided without an operation theatre facility.

As per Indian Public Health Standards (IPHS), there is no provision for an x-ray machine and appropriately so at the primary health centers. None of the services listed in mobile medical units particularly require an x-ray for diagnostic purposes. There are operational challenges as the alignment gets altered during travel and thereby affecting the quality of the picture resulting in improper diagnosis. There are also chances of indiscriminate use of an X-ray which would be difficult to curtail in the absence of any medical audit being done. The state government needs to reconsider the need for an x-ray facility in the mobile units.

The periodicity of visits to each village becomes crucial for effective impact. In Madhya Pradesh, each block had one unit resulting in each village being visited at least once a week. But in Bihar, one unit was provided for the whole district as a result of which, villages were visited once a month. This is not desirable considering the fact that the villagers had nowhere else to go during illness. There is clearly a need to improve the frequency of MMU visits in Bihar – the number of units per district need to be increased so as to ensure that each unit visits a village at least once in ten days.

The monthly expense of a unit per month for Jagran in Bihar was INR 468000 (9360 USD) versus INR 175000 (3500 USD) in Madhya Pradesh. The increased cost in Bihar could be attributed to the greater number of vehicles, human resources and facilities provided in the van. The cost of the patient also was more in Bihar at INR 309 (6.18 USD) versus that in Madhya Pradesh at INR 83 (1.65 USD). In Madhya Pradesh, the cost per patient across providers doesn't seem to have any relation between the number of blocks allocated, annual amount agreed upon and cost per patient. (Annexure 10)

At the same time, the average patients seen by a unit per visit in Bihar averaged to 126 whereas in Madhya it was at 92. One could argue that in case of Bihar, a single unit catered to an entire district with a larger population whereas that in Madhya Pradesh catered to a block with lesser. But this could also mean that a unit in Madhya Pradesh is not being used to its full capacity. If we factor in the human resources available per patient (excluding drivers), there are three clinical staff for ninety two patients (3:92) in MP whereas in Bihar there are three clinical staff for sixty three patients (6: 126 or 3:63).

It is recommended that the number of units per block/district be determined on the basis of population density in the area, and distance between villages. The state should ensure that the mobile units are visiting the villages on a frequent basis (at least once in ten days) while making sure that capacity is being utilized effectively.

Finances: The payment mechanism remained the same for the states, except that in Madhya Pradesh Jagran was paid every two months and in Bihar, 50 percent of the amount was paid in the beginning of the month and the rest was paid post submission of activity reports for the concerned month. In Bihar, Jagran also has the advantage of escalating its complaint to the State Health Society if the payment is delayed by District Health Society. But timely payment was a complaint in Madhya Pradesh; this delay in payment could also impact operations if the organization did not have enough resources. Though the contracted organization had to have an annual turnover of INR 1,000,000 (20000 USD), irregular payment over an extended period could hamper the operations.

It is recommended that the when drawing up the contract, a clause needs to be included stating that the government needs to pay the private partner for its services within 'X' number of days of submitting the invoices. If this payment is delayed, the private partner should have access to arbitration or escalation alternatives, which should be clearly stipulated in the contract. This is a crucial step to ensure there are no delays in payment.

A peculiar feature in case of Madhya Pradesh was that of the annual agreement amount which varied from provider to provider and block to block (Annexure 10). It is not clear if distance was used as a criterion. But considering that in Bihar, the amount was fixed at INR 468,000 per month per unit for all the three private providers, the argument that the amount is based on distance does not seem probable. Here one can assume that the state of Madhya Pradesh would require more resources to keep track of varying payment. It is not clear from the available literature as to why the state chose to have varying amounts for different blocks within one district or across providers.

Given that cost per patient, from INR 48 (0.96 USD) to INR 144 (2.28 USD) varies widely across providers; it is recommended that Madhya Pradesh needs to streamline its payments so that there is uniformity across agreement amounts made to providers. This will ensure that cost per patient is not significantly high in the case of some blocks/providers.

6. Monitoring and Evaluation

Monitoring and Evaluation in Bihar

The performance of the mobile medical units is monitored through periodic reports submitted by the private provider for each unit. The sample reporting formats are provided in Annexure 11. The reporting system for the *Arogya Rath* consists of the following:

- Daily Out-Patient Department (OPD) Register: This register captures patient details such as patient name, age, and village. It also captures details of whether the patient was given medicines and availed of X-ray, ECG or pathology services. Each patient is expected to sign or put his thumbprint across his name in the register.

  Given the level of details collected in this report, verification of the data collected is a difficult and painstaking process. The patients' signature/thumbprint serves as a measure of verification of the information; however, patients are often unaware of what they are signing and the register is vulnerable to manipulation.

- Online Daily Report: This report is a consolidation of the data collected in the OPD register. The report records the number of patients screened and the number of X-ray, ECG and pathology tests conducted. The report also captures the number of medicines dispenses and whether the audio-visual was played. The report makes a record of the staff present in the unit on that particular day, as well as a record of the presence of representatives from the Health Department and the local Panchayat Raj.

The Supervisor is responsible for filling the report and submitting it to the DHS authorities for verification and signature. The agreement requires that online daily reporting has to be ensured by the private partner. Since it is not economically feasible to install a computer in each mobile unit, the online reporting is maintained at the central office of the private provider in Patna. The Supervisor conveys the details of the online daily report by telephone to the central office, which then enters the details in the computer.

- Weekly/Monthly Summary: This report consolidates and summarizes the daily report on a weekly and monthly basis. The report captures details of the village visited, the staff present on the visit, the number of patients screened, the number of X-ray, ECG and pathology tests conducted, and whether or not audio-visual was played.

  The weekly progress reports are to be submitted by the private provider to the Civil Surgeon (CS) of the concerned district as well as to the State Health Society Bihar. The monthly reports are to be submitted by the private provider to the Civil Surgeon of the concerned district as well as to the State Health Society Bihar by the 5th day of the next month. Copies of the monthly report, signed by the CS, are submitted along with the invoice the 3rd day of each subsequent month.

All the reporting formats have been prescribed by the State Health Society Bihar (SHSB). The monitoring responsibility for each unit lies with the District Health Society (DHS) under whose jurisdiction the mobile unit operates. At the same time, the Data Center of the SHSB is also expected to undertake daily monitoring of the program. The monitoring reports are maintained by the private provider but are to be verified by the DHS or the SHSB.

The day to day activity of the mobile unit falls under the jurisdiction of the Medical Officer in Charge (MOIC), the Civil Surgeon (CS) and the District Magistrate (DM). The CS, under authority from the DM, monitors the operational activities of the mobile unit on a daily basis, and is expected to undertake a periodic review of the efficiency and effectiveness of the unit. Where the district authorities are unavailable, the Block Medical Officer (BMO) acts as the relevant

authority. The District Magistrate/Civil Surgeon of each district also issues a Certificate of Operation to the private provider at the end of every month.

The agreement stipulates that patient cards and registration records need to be maintained by the private provider. In practice, while registration records are duly maintained, there is no provision for patient cards. The practice of maintaining patient cards is recommended, since it provides an easy reference to the patients' medical history, and discourages repetition of tests and treatments.

The private provider is also expected to maintain photographs of each visit. The photographs are stored with the private provider but are available to DHS/SHSB authorities for verification. Our field visit revealed that the private provider equips the mobile units with cameras for this purpose. This is a commendable practice since it provides easy physical records that can be used to complement the written records.

The agreement also provides for verification of MMU activity by the Village Health and Sanitation Committee (VHSC) members. VHSC members can visit the MMU while in operation to conduct a check on the services being provided. This also serves the purpose of creating a sense of ownership towards the program among the local authorities.

The agreement stipulates that the private partner is expected to place a suggestion box "in an easily accessible and prominent position" in the mobile medical unit, with the purpose of enabling patients to provide suggestions, complaints and feedback. While the agreement thus makes provisions for patient feedback, it needs to be augmented by a system where the feedback is collected regularly and dispatched to the DHS for action. The DHS should respond to the feedback within a reasonable period (such as 15 days) or forward the feedback to the SHSB for action if it deems it to be appropriate.

The DHS is given the responsibility of judging whether services under the contract have been performed in a satisfactory manner. The performance parameters on which the private provider will be measured are given in the table below:

Table 6: Performance Parameters for Mobile Units in Bihar as Listed in the Agreement

Performance Parameters
Each mobile unit is to provide services to at least 50 patients per day. The DHS also provided for an incentive clause, wherein the provider is paid INR 10 for every patient examined over and above 100 patients per day.
All X-rays, pathology tests to be done as prescribed by the doctor on duty.
Routine immunization of all children in the villages visited, with the support of the DHS.
Blood test for AIDS/HIV for all suspected patients as diagnosed by the doctor on duty.
For all suspected cases of genital/breast cancer, the patient must be referred to the district hospital for a Pap Smear Test.
Distribution of oral pills and condoms provided by DHS.
IUCD (Intra Uterine Copper Device) insertion to be referred to government hospitals.
The following targets are to be met each week under Ante Natal Care ○ Antenatal check-ups for all pregnant women in the village ○ 100% Tetanus Toxoid (TT) immunization in the village ○ 100% distribution of prophylactic and therapeutic IFA tablets
The following targets are to be met each day under Community Mobilization ○ 100% individual counseling for all patients coming in for individual counseling ○ 100% group counseling for all patients coming in for group counseling ○ 100% counseling for institutional delivery for all expectant mothers ○ One audio-visual show of 30 minutes each day. An incentive of INR 200 (USD 4) to be paid to the private provider for conducting extra shows.

Some of the performance parameters listed above, though detailed, are vaguely defined. Except for the first parameter (number of patients), no quantitative targets are given; rather, it is more appropriate to consider these as a list of services that the unit is expected to provide on an 'as required' basis. For parameters such as 100 percent ANC care and 100 percent tetanus toxoid immunization, it is necessary for both the private and the public partner to be aware of the their catchment population. They also need to review data of people who were referred for care to higher centers.

It is also important to note that the monitoring reports that are currently in use do not capture most of these data. The reporting formats do not have provisions for capturing data on immunizations, blood tests, distribution of oral pills or condoms, or referrals made. The reports do not record any Ante Natal Care provided by the mobile medical units. There is no information on the counseling provided either. Given that none of this data is captured, it becomes impossible to objectively measure the performance of the unit in relation to the performance parameters set out for it in the agreement. This points to the need to clearly define the performance parameters in the agreement, and develop reporting and monitoring systems that capture appropriate data to measure performance against agreed upon parameters.

SHSB might also find it useful to capture data on the kind of X-rays that are being prescribed as well as on the kind of procedures that are being performed in the minor OT. Given that both the X-ray machine, along with the processing lab, and the minor OT and accessories contribute significantly to the higher cost of the program, it is important to capture these data in order to analyze the utilization of these services, and assess whether the additional cost involved in providing these services is justified.

The agreement provides for the project to be reviewed six months from its launch. The review would be conducted by external evaluators selected by SHSB. However, so far, no independent evaluation of the *Arogya Rath* program has been conducted. It is important that the data collected through the monitoring and reporting process is analyzed in order to understand the strengths and weaknesses in the program, and make course corrections where necessary. The lack of an independent evaluation of the program implies that it is unable to objectively analyze and evaluate its performance and make improvements where necessary.

The initial contracts under *Arogya Rath* are expected to come to an end in 2012. SHSB is likely to invite bids for extending the program. At this juncture, an independent evaluation can be extremely valuable in helping SHSB understand the strengths and weaknesses of the program in its current state, and make the changes necessary for the program to perform better in its next phase.

Monitoring and Evaluation in Madhya Pradesh

Prior to launching of *Deen Dayal Chalit Aspatal*, The Government of Madhya Pradesh had issued instructions to all the district officials to inspect the units, and ensure availability of drugs as per a check list (Annexure 12). This activity was to be undertaken before starting the MMU services and the reports were to be submitted to the Directorate of Public Health and Family Welfare a day before the inauguration of the services. However, there seems to be no repetition of this inspection activity on a regular basis thereafter and no information is found in the public domain suggesting continuity.

The performance of the mobile medical units was monitored through reports submitted by the private provider for each unit on a weekly and monthly basis. The weekly and monthly reports, provided in Annexure 13, captured the profile of the beneficiaries screened, the nature of services availed, the number of villages and village markets visited, type and quantity of medicines dispensed, details of health educations sessions conducted, etc. The reports captured details of all the targets set for the program and making the incentive mechanism implementable. The reporting formats were uniform across the state. The supervisors were responsible for submission of these reports.

- Weekly Report: The weekly report captured the patient profile details, diagnosis, services availed, health education details and villages visited. The services were further detailed to cover the type of services availed and was specific to the list of services agreed upon in the contract. These include patients for consultation, patients whom medicines were dispensed, children immunized for Diphtheria Pertussis Tetanus (DPT), BCG (vaccine against tuberculosis) and polio, women availing ante natal care, post natal care, treatment details of malnourished children, people counseled for family planning, patients screened for malaria and tuberculosis and patients referred for higher level of care.

  The weekly report also captured details of type and quantity of medicines and consumables dispensed for those provided by the government and those procured by Jagran. The health

education component included the number of sessions and the topics covered. The report is reviewed by the authorized reviewing authority and also has provision for remarks by the reviewing authority.

- Monthly Report: The monthly report was similar to the weekly reports and was essentially a consolidation of the weekly report. It had, in addition to the weekly report, a provision for capturing the total number of working days. The reports were reviewed by the concerned Block Medical Officer and the Chief Medical and Health Officer of the concerned district. The monthly reports captured the activities of the last working month as well as the cumulative data for all the months till date. The patient numbers captured enabled the government to decide on the payment including the incentives and disincentives.

The weekly and monthly reports were a comprehensive source of quantitative data. However, this data was not reflected in the physical progress documents available on the website. For example, the physical progress report for 2007-08 captured only the number of working days, villages covered, total patients screened, total woman availing ante natal care, the unit average per day, the district average per day and the organization's average per day in relation to the other providers.

With the information captured, the government is in a position to modify the services by looking at the common diagnoses and the number of people availing certain type of services. However, verification of data is a challenge, even though it is only at the block and on a weekly basis. The accuracy of the monthly data would depend on the accuracy of the weekly reports.

Moreover, there is no provision for beneficiary feedback and no evaluation reports of the program are available. Names of the patients were also not collected and the numbers could be inaccurate. The accuracy of the monitoring is thus dependent on the integrity of the individuals involved in the process. Moreover, the lack of qualitative data does not provide for a comprehensive picture. This makes it difficult to monitor for any fraudulent practices.

Global Positioning System (GPS): All the units were equipped with GPS which was centrally monitored at the directorate. The GPS ensured that the units complied with the discussed

routes. Any deviation of route without prior information was considered violation of agreement terms.

The route charts were so designed that each venue was visited at least once a week. They were submitted to the directorate office a week in advance. Through this system, details of venue and distance covered by the unit were recorded on a daily basis[17].

The Chief Medical and Health Officer (CMHO), Block Medical Officer (BMO), the Chief Executive Officer of the Gram Panchayat and the Executive Magistrate were designated as the reviewing authorities and the weekly and monthly reports were to be submitted to them for review. The reviewing authority had the right to seek additional information on the services being provided. Upon review, the authorities could note down any discrepancies in the remarks column, and the private provider had to justify his position within a week of such remarks noted.

The reviewing authorities include all the stakeholders concerned but limited to the reporting formats. But from the reporting formats and the agreement copy, the BMO and CM&HO seem to play a bigger role. There is not much evidence of participation at the village level.

In January 2011, the monitoring system was strengthened to ensure that the mobile medical units reached out to the remotest parts of the state. Under the scheme, clusters of ten to seventeen developmental blocks were formed. The contracted provider had to establish its office at the district headquarters through which information about the progress was to be given to the BMO on a daily basis, to the CM&HO on a weekly basis and to the health department on a monthly basis. This monitoring would be undertaken through the use of GPS[18].

The state has some performance parameters linked to the incentive system. The private provider is measured against these parameters. The parameters for *Deen Dayal Chalit Aspatal* are as follows:

[17] There are no reports of such activity being done in the public domain. This system has been detailed out in the "TOR and Guidelines" document, MP Ministry of Health and Family Welfare Website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

[18] http://khojkhabarnews.com/?p=9953, last accessed 16th May 2012

- The private provider has to examine at least 75 patients per visit
- Ante natal care needs to be provided for 300 women per month
- Blood and sputum examinations of 50 patients should be conducted per month for malaria and tuberculosis

The incentive mechanism has been designed around these parameters. Anything less than the parameters would attract penalty and more would attract an incentive. Less than 75 patients screened per visit would attract a disincentive of INR 10 (0.2 USD) per patient difference. More than 100 patients screened during a visit would attract an incentive of 0.2 USD per patient increase.

It was mandated by the contract that the private partner provides two thirty minute capsules on health education. In an instance whereby the partner provides more than the prescribed two slots, an incentive of INR 200 (4 USD) is given.

As mentioned before, services were provided for twenty six days in a month. In an event, where the number of days was increased with prior approval of CM&HO, an incentive of INR 5,000 (100 USD) was given. At the same time, irregular services were penalized at INR 10,000 (200 USD) per day of absence of service.

These parameters, though clearly defined, do not provide any incentive for improving the quality of care – incentives are provided only on the basis of volumes not on the basis of service quality. In the absence of independent third party evaluation or baseline survey, it is difficult to assess the impact of the program. There was no evaluation done for even the previous program (*Jeewan Jyothi Yojana*) of Madhya Pradesh except for that the government identified managerial constraints in providing the services themselves. The private partner has been contracted to fill this gap but one cannot conclude that it really has done that. In the scenario, the program corrections will have to be based on anecdotal or from the volume based reporting formats which may be valid. But this could also mean that the changes in the program would not improve the program exponentially. The government would me more on a “fire fighting” mode than being proactive.

Improving Monitoring and Evaluation

Monitoring in public health programs is extremely critical, but often the monitoring process is limited to simply reporting the data collected, instead of analyzing this data, and using the analysis to bring changes to the program for better performance. The monitoring process needs to involve collection of data, verification of the data collected for authenticity, and analysis of verified data. This needs to be further augmented by periodic independent evaluations which identify the strengths and weaknesses of the program and help to plug gaps in performance.

An effective monitoring and evaluation (M&E) mechanism is invaluable in identifying gaps and strengthening the program for better performance. It can bring to light the efficiency in use of resources, fund management, identification of fraudulent practices, cost benefit analysis and various other aspects of the program. However programs often neglect the monitoring and evaluation component.

This is true of the monitoring and evaluation component in the mobile medical units also. Some of the key issues with the monitoring and evaluation systems that need to be addressed in the MMU programs in both Madhya Pradesh and Bihar are identified below:

- The NRHM guidelines provide very little advice on the monitoring and evaluation protocols that need to be put in place by the state. Therefore, the monitoring and evaluation component of the program is left entirely to the discretion of the state. Where states lack adequate capacity to design and maintain elaborate monitoring and evaluation mechanisms, the M&E component of the program gets neglected.

  It is recommended that the NRHM guidelines should also provide guidance to the states on the monitoring and evaluation system for the MMU program. Equally important, the program must provide for a separate budgetary allocation for the monitoring and evaluation component to ensure that it does not get neglected.

- The government needs to ensure that the data collected as part of the reporting and monitoring process is relevant. Currently, the performance parameters agreed upon at the time of the contract do not match the data collected in the monitoring reports. This makes it difficult to measure the performance of the units on the basis of the parameters agreed upon at the time of the contract signing. Moreover, time and resources are spent on collecting data which are not linked to the agreed upon performance parameters.

  It is recommended that the parameters used for measuring the performance of the private providers have to be mutually agreed upon by both the private and public partners during contract negotiations. These agreed upon performance parameters need to be well defined and clearly identified in the contract document itself. The monitoring formats should be designed in such a way as to capture all the data required to measure private provider performance on the basis of these parameters.

- Effective fraud control mechanisms are missing in the case of both programs. The block/district authorities are responsible for verifying the data entered in the report. However, in cases where block/district authorities are negligent or corrupt, there is potential for entering fraudulent data. The State Health Society therefore needs to put mechanisms in place for surprise verification checks by state level authorities or community members in order to prevent such fraud.

  Private providers also need to put in fraud control mechanisms in order to ensure the accuracy of the data. In the case of Jagran Solutions, senior management members often pay surprise visits to the mobile medical units in order to check on the staff and services. Such a system needs to be institutionalized rather than left to the initiative of individuals.

- While a large amount of data is being collected in both states as part of the reporting process, there is no use being made of this data. The data being collected is being presented as it is, rather than being further analyzed. This undermines the very purpose of the monitoring process, which is to collect and analyze data to identify gaps in performance and correct these gaps.

- An independent third party evaluation is valuable for an understanding of the strengths and weaknesses of the program. However, no such evaluation has been conducted in either Madhya Pradesh or Bihar. Considering that both states have gone in/ are going to go in for an extension of the program, an independent evaluation would have been very helpful in enabling the state to restructure the program to build on its existing strengths and address its weaknesses.

  It is recommended that the state make provision for regular third party evaluations to be conducted in order to assess the program performance. Such evaluations are required in order to assess program performance and address gaps in performance. The evaluations may be conducted on an annual basis. A more detailed mid-term evaluation should also be provided for as this is an ideal stage to take stock of performance and make course corrections if necessary. An evaluation at the end of the contract period would also be useful as a basis for extension.

  Baseline studies are highly useful in allowing the government to have a complete picture of the situation before and after the program and enabling it to assess the impact of the program. In both Bihar and Madhya Pradesh, the MMU programs were launched without conducting a baseline study. It is strongly recommended that once the current term is over, the government undertake a baseline study before extending the program.

- The aspect of service quality has not been addressed in the monitoring and evaluation process in either state. It is not adequate to ensure that the services set out in the contract are being provided – it is the responsibility of the state to ensure that appropriate service quality standards are being maintained in the provision of services. For this purpose, it is necessary to have clearly defined service protocols as part of the contract. This needs to be augmented by regular quality checks to be conducted by experts.

Our analysis reveals that there are some gaps in the monitoring and evaluation systems of the programs in both Bihar and Madhya Pradesh. The state needs to address these gaps in order to strengthen its monitoring and evaluation systems and thus improve the overall performance of the program.

7. Conclusion

Mobile medical units are valuable in remote areas, where the population often has no other healthcare alternatives from qualified healthcare providers. Mobile medical units have addressed this gap in the public health system by reaching out to remote areas with limited facilities and manpower, and providing effective primary healthcare services at no cost to the people in these areas. The mobile units have reached out to hundreds of villages and millions of beneficiaries since the start of their operations.

At the same time, there are many challenges to the effective functioning of mobile units. Providers face many operational challenges on a daily basis – ensuring staff presence, ensuring that all the equipment is in working order, ensuring adequate supply of drugs, dealing with any contingencies on the ground, are just some of these challenges. Staff recruitment and retention is also another key area of concern for the private provider, and this needs to be considered as a priority.

For the state government, ensuring private partner performance is a major challenge. This is further augmented by the difficulty the government faces in defining and measuring quality of the services provided by the private partner. The state government needs to significantly strengthen its monitoring and evaluation mechanisms in order to fulfill its supervisory responsibilities as the public partner. A recommendation is to rework the reporting formats to, at least, capture data for the indicators as outlined in the contract with the service providers.

The Government of India, through the NRHM, also has a role to play in strengthening the program. The NRHM provides guidelines for running mobile units, but also allows enough flexibility to the states to adapt the program to meet local needs. However, given that many states tend to adopt the guidelines as they are, it would be useful for the NRHM to provide more detailed guidelines, especially for key components such as program monitoring and evaluation, which are currently neglected, while retaining the flexible nature of the guidelines.

At the same time, the state government has to undertake a stewardship role – designing and developing the program, adapting it to meet local needs, monitoring private providers to ensure performance, evaluating the program at periodic intervals to make course corrections where necessary, and supporting local government authorities as well as the private partners in all ways possible to ensure the success of the program.

8. Annexure

Annexure 1: Comparative Snapshot of the Mobile Medical Units in Bihar and Madhya Pradesh

Particulars	Bihar	Madhya Pradesh
Name of the program	Arogya Rath	Deen Dayal Chalit Aspatal
Program period	November 2009 to July 2011	July 2007 to April 2011
Number of units before NRHM	None	49 mobile medical units under the centrally sponsored Jeewan Jyothi Yojana
Number of units post NRHM recommendation of MMUs	38 units (12 under Jagran Solutions)	92 units (14 under Jagran Solutions)
Catchment area for MMUs	38 districts (12 with Jagran)	92 blocks (14 with Jagran in 3 districts). The units primarily cater to tribal blocks
Need for PPP	The acute shortage of staff at the primary health centers made it infeasible for a state run MMU program and hence PPP was adopted.	The state ran into trouble with managerial inefficiencies, recurring costs, retaining staff, drug management etc. with the Jeewan Jyothi Yojana and hence decided to operate the current program under PPP.
Total private partners	3	13
Criteria for selection	• The private provider must have previously provided services of similar nature. • The annual turnover of the private party should be INR 10,000,000 (200,000 USD[19]).	• The private party's registration must be valid for three years from the date of signing the agreement. • It is mandatory for the bidder to have three years of experience in health services provision (consultation, counseling, treatment or delivering of centrally sponsored programs) including 2 years in the rural regions. • The minimum turnover for the past three years must be INR 1,000,000 (20000 USD) and should have assets worth INR 500,000 (10000 USD).
Bidding process	Centralized at state level. Interested parties had to make a presentation of their bid and the selected parties were then asked to submit their financial bid by the state.	Decentralized to district level. The interested private parties had to submit both the technical and financial bids at the district they want to bid for.
Infrastructure	A customized, air-conditioned TATA 709 as the medical unit and a TATA Sumo as the staff vehicle	A customized, non air-conditioned TATA 407 as the medical unit. The staff travel in the same unit
Services	Maternal and child health, HIV AIDS screening, family planning, adolescent reproductive and sexual health, health education, X-ray, minor operation theater and specialist screening ((eye	Maternal and child health, family planning, malaria and tuberculosis screening, adolescent reproductive and sexual health, health education

[19] 1 USD= 50 INR; conversion rate used in the document

	and Ear, Nose and Throat(ENT))	
Clinical staff to patient ratio	3:63	3:92
Average patients per month per unit	18165	14538
Cost per patient (Jagran Solutions)	INR 309 (6.18 USD)	INR 83 (1.66 USD)
Payment per unit per month to Jagran	INR 468000 (9360 USD)	INR 175000 (3500 USD)
Annual agreement amount	Uniform across providers at INR 468000 (9360 USD) per month per unit	Non-uniform across providers and blocks (within same districts and between districts)
Monitoring and evaluation	Monitoring restricted to number of patients availing services. Neither qualitative data obtained nor patient feedback. Daily and monthly reporting system is followed. Evaluation component by a third party was not conducted though present in the agreement.	Monitoring was restricted to number of patients availing services. No qualitative data obtained or patient feedback. Weekly and monthly reporting was followed. There is no mention of evaluation study of the scheme.
Performance parameters	• Provide services to at least 50 patients per day per unit. • All X-rays, pathology tests to be done as prescribed by the doctor on duty. • Routine immunization of all children in the villages visited. • Blood test for HIV/AIDS for all suspected patients. • All suspected cases of cervical cancer to be referred to the district hospital for a Pap Smear Test. • Distribution of oral pills and condoms provided by District Health Society. • IUCD (Intra Uterine Copper Device) insertion to be referred to government hospitals. **Weekly targets:** • Antenatal check-ups for all pregnant women in the village • 100% Tetanus Toxoid (TT) immunization in the village • 100% distribution of prophylactic and therapeutic Iron and Folic Acid (IFA) tablets **Community Mobilization Targets:** • 100% individual counseling for all patients coming in for individual counseling • 100% group counseling for all patients coming in for group counseling	• The private provider has to examine at least 75 patients per day per unit • Ante natal care needs to be provided for 300 women per month • Blood and sputum examinations of 50 patients should be conducted per month for malaria and tuberculosis

	• 100% counseling for institutional delivery for all expectant mothers • One audio-visual show of 30 minutes each day.	
Incentives and disincentives	The provider was paid 0.2 USD for every patient examined over and above 100 patients per day per unit. An incentive of INR 200 (USD 4) to be paid to the private provider for conducting extra shows.	The provider was paid 0.2 USD for every patient examined over and above 100 patients per day per unit. Less than 75 patients seen per day a disincentive of 0.2 USD deducted per patient difference Working days more than 26 days in a month attracted incentive of 100 USD was given An incentive of 4 USD was paid to the private provider for conducting extra shows.
Beneficiary feedback	Available but there is little evidence of the suggestions being implemented	The agreement does not stipulate for any
Reviewing authorities	Medical Officer In Charge (MOIC), the Civil Surgeon (CS), the District Magistrate (DM) and Village Health and Sanitation Committee. The block medical officer takes over in the absence of district authorities	The Chief Medical and Health Officer (CMHO), Block Medical Officer (BMO), the Chief Executive Officer of the Gram Panchayat and the Executive Magistrate

Annexure 2: Distribution of Districts to Private Providers under Arogya Rath, Bihar

Private Provider	**Districts of Operation**
Jagran Solutions (12 districts)	Araria, Katihar, Kishanganj, Purnia, Bhagalpur, Banka, Munger, Lakhisarai, Khagaria, Begusarai, Sheikhpura, Jamui
Jain Studios (14 districts)	Muzzaffarpur, East Champaran (Motihari), Sitamarhi, Durbanga, Samasthipur, West Champaran (Bettiah), Madhubani, Supaul, Madhepura, Saharsa, Vaishali
Spake Systems (12 districts)	Patna, Nalanda, Bhojpur, Buxar, Rohtas, Kainur, Armal, Aurangabad, Gaya, Jehanabad, Nawada, Gopalganj, Saran, Siman

Source: State Health Society, Government of Bihar

Annexure 3: Essential Drug List Prescribed by Government of Bihar

SCHEDULE-IV

THE ESSENTINIAL DRUGS LIST FOR OUT-DOOR PATIENTS.

Sl.No.	Drug for Out-door Patient
I.	Albendazole (400mg)
2.	Amoxvcilline (250 mg, 125mg Kid) Caps
3.	Ampicilline (250mg) Caps
4.	Aspirin (325 mg,75 mg) Tablet
5.	Cetirizine (10 mg) Tablet
6.	Ciprofloxacin (500mg) Tablet
7.	Cough Expectorant
8.	Diclofenac Sodium Tablet (50mg)
9.	Dicyclomin Tablet
10.	Dicylomin + Paracetamol (Tablet)
II.	Diethylcarbazine Tablet (DEC)
12.	Duvadilon Tablet
13.	Fluconazol
14.	Gentamycine Eye/Ear Drop
15.	Metoclopramide Tablet & Injection
16.	Metronidazole (400mg)
17.	Paracetamol Tablet & Syrup
I8.	Ranitidine (150mg) Tablet
19.	Salbutamol (4mg) Tablet
20.	Vit. B Complex-Tablet
2I.	Xylometazoline Nasal drop
22.	A.R.V.
23.	Erythromycin Syrup
24.	Co-trimexazole Syrup
25.	Amoxicillin + Cloxacillin Syrup
26.	Oflaxacin + Orinidazole Syrup
27.	Ondencetron Tab. & Syrup
2S.	SSZ Cream (Silver Sulphadiazine Cream)
29.	Gamabenzene Hexachloride Lotion
30.	Vitamin B Complex Syrup
31.	Iron & Folic Acid Tablet
32.	Calcium Tablet
33.	Ofloxacin Eye Drop

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Source: Jagran Solutions, New Delhi

Annexure 4: Service Data of Jagran Solution for Arogya Rath, Bihar

Month	# of Districts Covered	# of Villages Covered	#. of Patients Examined	# of X-rays	# of Pathology Tests	# of E.C.G	# of Patients Referred	# of O.T
Jul-09	4	83	6681	288	129	1	1	0
Aug-09	9	251	19742	577	2068	98	42	0
Sep-09	10	240	15396	778	2637	502	99	0
Oct-09	11	286	18464	1182	3745	1368	698	0
Nov-09	12	299	20775	1448	4026	1507	1401	0
Dec-09	12	311	22104	1503	4423	1456	1678	0
Jan-10	12	292	19899	1235	4077	1713	1538	0
Feb-10	12	288	18332	1145	3877	1697	1432	0
Mar-10	12	306	19450	1507	4295	2173	1542	0
Apr-10	12	297	19239	1512	4127	2042	1226	0
May-10	12	328	20406	1805	4514	2297	1524	0
Jun-10	12	333	21102	2035	4639	2322	1591	0
Jul-10	12	324	20423	2086	4264	2129	1402	0
Aug-10	12	338	22461	1799	4111	1802	1349	0
Sep-10	12	292	18325	1949	4107	2033	1332	1231
Oct-10	12	271	16686	1793	3658	1777	1262	1285
Nov-10	12	261	15955	1796	3532	1737	1138	1316
Dec-10	12	298	18713	2037	4070	1991	1242	1538
Jan-11	12	290	18898	2170	4075	2139	1354	1493
Feb-11	12	272	19519	2429	4313	2104	1262	1412
Mar-11	12	280	19567	2129	4204	2104	1263	1524
Apr-11	12	260	17036	1657	3730	1762	1064	1358
May-11	12	300	19428	2155	4180	2038	1105	1524
Jun-11	12	302	19404	2046	4122	2090	1327	1499
Jul-11	12	303	20465	1761	3840	1836	2641	1219
Aug-11	12	286	18530	1572	3561	1667	2483	1274
Sep-11	12	298	19710	2072	4268	2027	1515	1455
Oct-11	12	228	14459	1515	3238	1461	1050	926
Nov-11	12	253	15944	1704	3612	1613	1113	1017
Dec-11	11	274	16992	1731	3464	1840	1323	1189
Jan-12	11	254	15519	1540	3465	1659	1058	1068
Feb-12	11	254	15706	1481	3476	1693	1039	1096
Mar-12	11	226	14118	1540	3237	1454	827	932
Totals		**9178**	**599448**	**53977**	**123084**	**56132**	**40921**	**24356**

Source: Jagran Solutions, New Delhi

Annexure 5: Distribution of Private Providers for MMU in Madhya Pradesh

Providers	Blocks	Districts
Community Action through Motivation Program, Rewa	12	7
Gyan Yogeshwar Vidyapeeth Samiti, Kukshi, Dist: Dhar	2	1
Jagran Solutions (A unit of Jagran Prakashan Limited)	14	3
Jain Video and Wheels Limited, New Delhi	14	7
Janak Hospital Ratlam	2	1
Jyotsna Jan Kalyan Swasth Samiti, Seedhi	1	1
K.G.N. Welfare Society Betul	6	2
Max Associates, Jabalpur	7	2
Nivedita Shaishnik Anusandhan Parikshan & Vikas Kendra, Bhopal	1	1
Sardar Sarovar Nav Nirman Samiti Anjad	10	3
Seth Mannu Lal Jagannath Das Trust Hospital, Jabalpur	6	1
Seva Bharti, Madhya Pradesh, Bhopal	14	4
Shri Gajanan Shiksha & Janseva Samiti, Dindouri	3	1

Source:"NGO-wise list", Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm). Last accessed 17th May 2012

Annexure 6: List of Equipment in MMUs in Madhya Pradesh

Equipment	**Equipment for Maternal and Child health**
Stethoscope	Hemoglobinometer
BP Apparatus	Sahli's Chart
ECG Machine	Fetoscope
Oxygen Cylinder and Mask	Speculum
Nebulizer	Torch
Blood Counter	Weighing Machines
Emergency Kit	Intrauterine device Kit
Dressing Material	Uristics
Equipment for Investigations	**IEC Equipments & Supplies**
Slides	Microphone
Microscope	T.V.
Reagents for Sugar, Albumin & Sputum Examination	DVD player
Sputum examination	Charts
Furniture	IEC Materials
Table and Chairs	
Examination Table	
Stretcher	

Source: Mobile Health Clinic Related Circulars, Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

Annexure 7: Block Wise Annual Agreement Amount for Jagran Solutions in MP

Districts	Blocks	Annual Agreed Amount (INR)	Annual Agreement Amount (USD)	Agreement Date
	Nalcha	1900000	38000	1/12/2007
	Sardarpur	1900000	38000	1/12/2007
	Dhar	1850000	37000	1/12/2007
	Baag	1805000	36100	1/12/2007
Dhar	Kukshi	1850000	37000	1/12/2007
	Barwani	2100000	42000	15/8/2007
	Thikri	2100000	42000	15/8/2007
	Rajpur	2100000	42000	15/8/2007
	Sendhwa	2100000	42000	15/8/2007
Barwani	Niwali	2100000	42000	15/8/2007
	Betul	2100000	42000	20/11/2007
	Chichauli	2100000	42000	20/11/2007
	shahpur	2100000	42000	20/11/2007
Betul	Ghodadongri	2100000	42000	20/11/2007
Total amount for 14 units		**28205000**	**564100**	

Source: "NGO-wise list", Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

Annexure 8: Format for Route Chart for MMUs in MP

Deen Dayal Chalit Aspatal

District…… Block……..

Name of the provider……..

Route Chart

Day	Arrival time	Venue	Departure time	Venue	Distance covered (km)	Remarks
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

Chief Medical and Health Officer

District……

Source: Mobile Health Clinic Related Circulars, Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

Annexure 9: Service Data for Blocks Allocated to Jagran Solutions for 2008-09 in MP

Service Data for 2008-09 for Jagran Allocated Blocks					
Districts	**Blocks**	**Working Days**	**ANC**	**Patients Screened**	**Unit Average/Day**
Betul	Betul	260	0	22249	86
	Shahpur	261	0	23037	88
	Chichauli	261	0	22516	86
	Ghodadongri	260	0	27972	108
Badwani	Thikri	272	69	22108	81
	Niwali	273	116	21183	78
	Rajpur	272	160	22125	81
	Sendhwa	276	230	25477	92
	Badwani	272	110	22025	81
Dhar	Sardarpur	271	565	25083	93
	Nalcha	358	828	30220	84
	Baag	377	222	27635	73
	Kukshi	341	148	27999	82
	Dhar (Teesgaon)	278	531	21648	78
Total for Jagran Solutions		**4032**	**2979**	**341277**	**85**
Total for all providers		27924	219957	2299758	82

MMUs run by Jagran Solutions		**MMUs across the State**	
Total annual amount	28205000	Total annual expenditure	117800000
Total beneficiaries	341277	Total beneficiaries	2299758
Cost per patient	83	Cost per patient	51

Source: "Physical Progress 2008-09", Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012.

Annexure 10: Cost per Patient across Private Providers in Madhya Pradesh (2008-09)

S. No	Name of the Organization	Districts	Blocks	Annual Agreement Amount Per Unit (INR)	Amount for All Units (INR)	Total Beneficiaries	Cost per Patient (INR)
1	Jyotsna Jan Kalyan Swasth Samiti, Seedhi	1	1	1813000	1813000	37832	48
2	Janak Hospital Ratlam	1	2	1737000	3474000	58940	59
3	Community Action through Motivation Program, Rewa	7	12	1800000 to 1950000	16980000	276139	61
4	K.G.N. Welfare Society Betul	2	6	1950000 to 2100000	12075000	179135	67
5	Sardar Sarovar Nav Nirman Samiti Anjad	3	10	1805000 to 2100000	19355000	280496	69
6	Seth Mannu Lal Jagannath Das Trust Hospital, Jabalpur	1	6	1938000 to 2074000	12117000	159663	76
7	Seva Bharti, Madhya Pradesh, Bhopal	4	14	1375000 to 2180000	24310000	296269	82
8	Jagran Solutions (A unit of Jagran Prakashan Limited)	3	14	1850000 to 2100000	28250000	341277	83
9	Shri Gajanan Shiksha & Janseva Samiti, Dindouri	1	3	1400000	4200000	46590	90
10	Jain Video and Wheels Limited, New Delhi	7	14	2100000 to 2500000	31912000	352438	91
11	Max Associates, Jabalpur	2	7	2100000 to 2220000	15300000	159930	96
12	Nivedita Shaishnik Anusandhan Parikshan & Vikas Kendra, Bhopal	1	1	1550000	1550000	15172	102
13	Gyan Yogeshwar Vidyapeeth Samiti, Kukshi, Dist: Dhar	2	2	1120000 & 1550000	1120000	9808	114
	Service data available for one block and hence total amount is also considered for one block						
	Service data available for 9 blocks and hence total amount is also considered for 9 blocks						

Source: "Physical Progress 2008-09", and "NGO-wise List", Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012.

Annexure 11: Reporting Formats (Weekly and Monthly), Bihar

Arogya Rath OPD Register Format

District Name:……..

Date:……..Time:……..

#	Name	Age	Name of Husband /Father	Name of Village	Medicines	Tick if Applicable			Patients Signature/ Fingerprint
						X-Ray	ECG	Pathology Test	

Source: Jagran Solutions, New Delhi

Arogya Rath Daily Reporting Format

Date of Visit ----------

Time of Visit (Morning/ Afternoon) ----------

Camp Site: Name and Address ----------

Name of Primary Health Center ----------

Name of Contact Person _____ Designation_____

Phone Number _____

Attendance (Tick √ or X)

1. Doctor_____ 2. Nurse _____ 3. Lab Attendant _____4. X-ray Technician_____

5. Pharmacist/ Van Manager_____ 6. OT Attendant_____ 7. Driver_____

Number of Patients	
Number of Pathology Tests	
Number of X-Rays	
Number of ECG	
Number of Medicines Dispensed	
Audio-Visual Played (Yes/No)	

Name and Designation of those present from Department of Public Health and Family Welfare

-
-

Name and Designation of those present from the Panchayat Raj

-
-

Source: Jagran Solutions, New Delhi

Summary Report

S. No	Date of Visit	Time	Name of Village	Indicate whether the following were present or absent					Audio-Visual Played (Y/N)	# of Patients	# of Pathology Tests	# of X-rays	# of ECG
				Doctor	Nurse	Lab Attendant	X-ray Technician	Pharmacist					

Source: Jagran Solutions, New Delhi

Annexure 12: Inspection Reports

Part-1

DEENDAYAL CHALIT ASPATAL - INSPECTION REPORT

Name of Organization……

Name of Block / District……

VEHICLE DETAILS

S.No.	Particulars	Availability Y/N
A	**External Decoration**	
1	Deendayal Chalit Aspatal writing on front	
2	Services Graphics on left side	
3	Services Graphics on right side	
4	NRHM & DDCA Logo on back	
5	List of services provided on side	
6	Slogans on back & side	
B	**Internal Arrangements**	
1	Arrangement for examination of Patient	
2	Arrangement for doctors chair & desk	
3	Adequate space for movement	
4	Television placed adequately	
5	Sufficient storage space	
6	Screening and privacy	
C	**Technical Specifications**	
1	Make	
2	Model	
3	Engine	---------- Cly DI
4	Engine Displacement	---------- CC
5	Turning Radius	---------- M
6	Ground Clearance	---------- MM
7	G.V.W,	---------- Kg
8	Overall Length	---------- MM
9	Gear Box	5 Forward 1 Reverse

Sign of Inspecting Authority

Name……

Designation……

Part-2

DEENDAYAL CHALIT ASPATAL - INSPECTION REPORT

Name of Organization……

Name of Block / District……

FURNITURE & EQUIPMENTS

S.No.	Particulars	Availability Y/N
A	**Furniture**	
1	Table & Chairs	
2	Examination Table	
3	Stretchure	
B	**Equipment for General Examination and Treatment**	
1	Stethoscope	
2	BP Apparatus	
3	ECG Machine	
4	Oxygen Cylinder & Mask	
5	Nebulizer	
6	Blood Counter	
7	Emergency Kit	
8	Dressing Material	
C	**Equipment for MCH Examination**	
1	Hemoglobinometer	
2	Sahli's Chart	
3	Fetoscope	
4	Speculum	
5	Torch	
6	Weighing Machines	
7	IUD Kit	
8	Uristics	
9	Pregnancy Kit	
D	**Equipment for Investigations**	
1	Slides	
2	Microscope	
3	Reagents for sugar, Albumin & sputum examination	
E	**IEC Equipments & Supplies**	
1	Mike	
2	T.V.	
3	DVD player	
4	Charts	
5	IEC Materials	

Sign of Inspecting Authority

Name……..

Designation……..

Part - 3A

DEENDAYAL CHALIT ASPATAL - INSPECTION REPORT

Name of Organization.....

Name of Block / District.....

Drugs provided by Mobile Health Unit Operator

S.No	Drugs	Formulation	Availability Y/N
1	Alprazolam	Tab. 0.5mg	
2	Aspririn	Tab. 325mg	
3	Benzyl benzoate emulsion	25%	
4	Calcium gluconate	Tab. 500 mg	
5	Chlorpheniramine maleate	Tab. 4 mg	
6	Clotrimazole	Cream 1%, Vaginal pessary 100mg	
7	Cresol with soap	Sol.	
8	Dextrose	Inj. 5%, 10%	
9	Dextrose with saline	Inj. 5%+0.9%	
10	Diclofenac sodium	Tab. 50 mg, Inj. 25 mg/ml	
11	Dicylomine	Tab. 10mg, Inj. 10mg/ml	
12	Dopamine	Inj. 40 mg/ml	
13	Furazolidone	Tab. 100mg, Susp. 25mg/5 ml	
14	Gentamicin	Eye/Ear drops (0.3% w/v)	
15	Hydrochlorothiazide	Tab.50 mg	
16	Hydrocortisone sodium succinate	Inj. 100 mg/vial	
17	Hydrogen peroxide	Sol. 20% w/v	
18	Magnesium hydroxide+aluminium hydroxide	Tab. (500 mg +250mg), Gel (625mg+312mg/5ml)	
19	Metoclopromide	Tab. 10mg, Inj. 5mg/ml, Gel (625 mg + 312 mg/5 ml)	
20	Oxygen	Inhal.	
21	Paracetamol	Tab. 500 mg, Syp. 125 mg/5ml	
22	Paraffin	Liquid	
23	Pheniramine maleate	Inj. 22.75 mg/ml	
24	Povidone iodine	Ointment 5%, Sol. 5%	
25	Spirit		
26	Sulfadoxine+Pyrimethamine	Tab. 500mg+25mg	
27	Tincture benzoin co.		
28	Vit. B1, B6, B12	Tab. 10mg+3mg+15mcg	
29	Water for injection	Inj.	
30	Epinephrine hydrochloride	Inj. 1 mg/ml	
31	Diazepam	Inj. 5mg/ml	
32	Silver sulfadiazine	Cream 1%	
33	ORS (WHO)	Sodium Chloride -3.5g, Potassium Chloride-1.5g, Sodium Citrate -2.9g, Dextrose -20g	
34	Isoxuprine	Tab. 10mg, Inj. 5mg/ml	
35	Methyl ergometrine maleate	Tab. 0.125mg, Inj. 0.2 mg/ml	
36	Sulfamethoxazole+trimethoprim	Tab. 400mg + 80mg, Tab. 100mg+20mg, Susp. 200mg+40mg in 5ml	
37	Ciprofloxacin	Tab. 250 or 500 mg	
38	Amoxicillin	Cap. 250, 500 mg, Susp. 125 mg/5ml	

Sign of Inspecting Authority

Name.....

Designation.....

Part-3B

DEENDAYAL CHALIT ASPATAL - INSPECTION REPORT

Name of Organization.....

Name of Block / District.....

Drugs provided by Govt. to Mobile Health Unit

S.No	Drugs	Formulation	Availability Y/N
	1. ANTI-INFECTIVE DRUGS		
	INTESTINAL ANTHELMINTICS		
1	Mebendazole	Tab. 100mg	
	ANTILEPROSY DRUGS		
2	Dapsone	Tab. 100mg	
3	Rifampicin	Tab./Cap. 300mg, 600mg	
4	Clofazamine	Cap. 50mg, 100mg	
	ANTI-PROTOZOAL DRUGS		
11	Chloroquine phosphate	Tab. 250mg	
12	Primaquin*	Tab. 7.5 mg	
13	Metronidazole	Tab. 400mg, Susp. 200mg/5ml	
	**To be used with caution & not to be used in infants*		
	2. DRUGS AFFECTING BLOOD		
	HAEMATINIC DRUGS		
14	Iron Folic Acid	Tab. Ferrous sulphate exsiccated IP 333-335 mg. + folic acid IP 0.5mg, Tab. Ferrous sulphate exsiccated IP 67 mg + Folic acid IP 0.5mg	
	3. GASTROINTESTINAL DRUGS		
15	Magnesium hydroxide+aluminium hydroxide	Tab. (500 mg +250mg), Gel (625mg+312mg/5ml)	
	4. HORMONES, OTHER ENDOCRINE DRUGS AND CONTRACEPTIVES		
	CONTRACEPTIVES		
16	Ethinyl oestradiol+norethisterone	Tab 35mcg + 1mg	
17	Ethinyl oestradiol+levonorgestrel	Tab. 30mcg+150mcg, Tab. 30mcg+300mcg	
	5. IMMUNOLOGICAL AGENTS		
18	Tetanus toxiod	Inj.	
19	B.C.G. Vaccine IP (freeze dried)	Inj.	
20	D.P.T. Vaccine IP (absorbed)	Inj.	
21	D.T. Vaccine IP (absorbed)	Inj.	
22	Measles vaccine IP	Inj. 1000 TICD 50	
23	Poliomyelitis vaccine IP	Oral	
	6. VITAMINS AND MINERALS		
24	Vit. A	Syp. 100000 IU/ml	

Sign of Inspecting Authority

Name.....

Source: "Mobile Health Clinic Related Circulars" Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

Annexure 13: Reporting Formats (Weekly and Monthly), MP

Montly Report																		
												Immunization			Malnourished children			
Organization's name	Block	Working days	Villages covered	Village markets covered	Patients examined	BPL patients examined	Patients to whom drugs dispensed	Investigation	Referral	ANC	PNC	BCG	DPT	Polio	Treat	Refer	Health edu Session	Reviewing authority

Weekly report																		
	Profile of Beneficiaries					Details of services availed by beneficiaries												
										Treatment details of Malnourished Children		Immunization						
Diagnosis	Scheduled Class	Scheduled tribe	Backward Class	Others	Total	Consultation	First Aid	ANC	PNC	Treated	Referred	BCG	DPT	Polio	Family Planning counseling	Blood & Sputum examination	Referrals	Others

Weekly Report (Contd)													
Villagaes/Village markets covered		Health education session details		Details of medicines and consumables supplied by the organization		Details of medicines and consumables supplied by the Government				Name/Designation	Date of review	Distance covered by the unit	Remarks
Villages covered	Village markets covered	No. of people	Details of topics informed	Medicines	Consumables	Medicines		Consumables					
				Name	Amount	Name	Amount	Name	Amount				

Source: "Reporting Format – Weekly & Monthly" Department of Public Health and Family Welfare, Government of Madhya Pradesh website (http://www.mp.gov.in/health/mobile-clinic.htm) Last accessed 17th May 2012

Disclaimer

The case study has been compiled after primary and secondary research on the organization and has been published after due approval from the organization. The case has been complied after field visit(s) to the organization in April 2012. The author of the case or ACCESS Health International are not obliged or responsible for incorporating any changes occurred in the organization after receiving the due permission from the organization to publish the case. The case study has been developed with a specific focus to highlight some key practices/interventions of the program and does not cover the program in its entirety.