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# Work responsibility of MVU professionals (veterinary surgeons and livestock inspectors) in Kandhamal district of Odisha

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**Abstract**
Livestock service delivery at farmers' doorstep is one of the best alternatives tried by Government to reach the poor livestock owners by reducing the burden of transportation cost on them. Mobile Veterinary Unit (MVU) was one such initiative in the state of Orissa, the concept of MVU was initiated on 10th July, 2011 as targeted service delivery mechanism in the state, under *Rastriya Krishi Vikas Yojana* (RKVY) latter covered to all the 314 blocks of the state. The study was carried in one of the remotest district i.e. Kandhamal district of Orissa to assess the types of services delivered by MVU in the distantly located villages, as per the views of service providers i.e. both Veterinary Surgeons (V.Ss) and Livestock Inspectors (L.Is) of MVU. The study came out with the conclusion that, the mean number of villages under coverage of service providers of MVU of Kandhamal district was 76.08, while, the average population of animals in those 40 villages which were targeted for service delivery in a particular month was 12608.7, average number of cases the service providers treated per month was 545.65 and the average vaccination achieved by MVU in the district was 72.17 percent. Cent percent respondents from both L.Is and V.Ss reported doorstep provision of services. The average distance covered to deliver services at farmers' doorstep was 60.52 Kms. MVU professionals spend maximum time on prophylactic activities i.e. 18.6 hrs/week and followed by 13.47 hrs./ week for extension activities Majority (52.2%) of respondents perceived their work load as too heavy.

**Keywords:** Surgeons, livestock, inspectors

## Introduction
Livestock rearing is particularly more important in India, where 70 percent of rural households belong to small, marginal and landless laborers. Animal rearing is important livelihood option for them. The livestock sector contributes significantly in the socio economic development of the country. The contribution of this sector is around 4.11 percent of the total GDP (DAHD&F, 2014) [13]. India accounts for the largest livestock populated country with around 512 million livestock heads. Despite being one of the leading countries in terms of livestock population and production, India's livestock productivity is 20-60 per cent lower than the global average (Animal Husbandry Report, 2012-17). Low output and productivity is due to poor genetic character, environmental factor, disease and disease resistance, husbandry practices and weak livestock service delivery. Livestock services have largely remained government funded activity under Indian context. In majority of Indian states, State Departments of Animal Husbandry are the major livestock service providers. The total number of veterinary hospitals/polyclinics, veterinary dispensaries and Veterinary aid centers are 12235, 27149 and 25858 respectively (DAHD&F, 2017-18) [12]. Though NCA (1976) [5] had recommended one veterinarian for every 5000 cattle unit and one veterinary institution for four villages, but it is estimated that one veterinary institution exists for 11 villages covering about 62 sq. km area (VCI, 2008) [11]. An average one veterinarian exists for every 7000 animals in India, In Kerala; the situation seems to be pretty good with one veterinarian for every 750 animals. However, in other states, situation is quite dismal with every veterinary clinic being situated at distance of more than 25 km away from villages (Anonymous, 2002).
Due to these constraints (Shweta, 2014, Chander and Rathod, 2013; Pratap *et al.* 2012) [10, 3, 6], the availability and effectiveness of public veterinary services has been limited. Livestock service delivery weakened due to many factors one of them was high transportation cost bearded by livestock owner to take animals to distantly located hospitals. Taking this into consideration Government came up with different alternatives to make the public service domain more effective.

Doorstep livestock service delivery is an alternative and more effective way to reach the animal owners at their convenience. In this context it is appropriate to discuss about one of the unique ways of service delivery to extend the services to the doorstep of farmers by mobile veterinary units (MVUs). The concept of MVU has become quite common in India. Many Indian states such as Karnataka, Tamil Nadu, Andhra Pradesh, Odisha, Arunachal Pradesh, Meghalaya, Rajasthan, Gujarat, Madhya Pradesh, and Chhattisgarh provide door step veterinary services through MVU or ambulatory clinics. In the state of Odisha, the concept of MVU was initiated on 10th July, 2011 under Rastriya Krishi Vikas Yojana (RKVY) and now it covers all the 314 blocks of the state. The aim of MVU is to ensure the desired veterinary services in interior pockets according to the preferred time of the farmers, so as to enable livestock owners and consider Animal Husbandry (A.H) activities as potential livelihood option and maximize profit through livestock rearing. A team comprising one Veterinary Surgeon (VS), one Livestock Inspector (LI) and one attendant with a vehicle called MVU van moves remote villages which are very difficult to be covered by stationary veterinary institutions to organize animal health camps. Total working days for MVU in a month are 20 days. In every working day, the team organizes one camp, which caters to the livestock owners of a minimum of two villages. The camps are organized on normal working days *i.e.* Monday to Friday. The remaining two days are meant for compiling monthly report and attending meeting.

## Materials and methods

The study was conducted in one of the remotest district i.e. Kandhamal district, in Orissa. The area was selected purposively, as a majority of the land areas of the district (71%) are forests, the connectivity within the district and with other districts is very poor. The transportation facility is inadequate and veterinary institutions are distantly located. All these attributes made this area suitable to study the functioning of MVU. In the 12 administrative blocks of Kandhamal district, 12 MVUs were in operation. Again from 12 MVUs of Kandhamal district, 12 veterinarians and 11 livestock inspectors, who were working in MVUs, were selected to study their perspectives on services delivered by MVU.

## Data

Primary data were collected through a pre-tested questionnaire. The questionnaires were distributed to all the veterinarians and livestock inspectors during the monthly meeting to get their response on functioning of MVUs.

## Results and discussion

### 1. Number of villages under control

The table below depicts, same 27.3% percent of L.Is each reported 75 and 80 villages under their coverage, whereas, 33.3 percent of V.Ss replied 80 villages under their coverage. So in overall sample, 30.4 percent of respondents reported 80 numbers of villages under their control, followed by 26.1 percent V.Ss or L.Is reporting for 75 villages. The mean number of villages under coverage in Kandhamal district was 76.08. The independent samples t-test value shows that there is no significant difference between the respondents w.r.to number of villages under control.

### 2. Livestock population to be covered in their respective blocks

This can be inferred from the table that majority (36.4%) of L.Is reported that they were catering service to a livestock population of around 12,000 in their respective blocks and majority (41.7%) of V.Ss responded, they were accountable for service delivery for 15,000 animals in their jurisdiction. So the mean number of livestock population covered by MVU professionals in Kandhamal district was around 12608.7 in each block. The independent sample t-test value indicates there is no significant difference between the respondents w.r.t. livestock population to be covered. These findings contradicts the finding of Saravana (2006) [8] who reported on an average each veterinarian covers 1500-2000 animals in their jurisdiction

### 3. Number of cases in a month

It can be inferred from the table that, almost equal percentage (27.3%) of respondents reported they were handling 500 and 550 number of cases per month. Majority (41.7%) of respondents revealed they were handling 500 cases per month. In overall sample, majority (34.8%) of respondents reported 500 cases per month. The mean number of cases handled by MVU V.S and L.I were 545.65 per month. The independent sample t-test analysis indicates there was no significant difference between the respondents in terms of number of cases per month. These findings contradicts the finding of Saravana (2006) [8] who reported on an average each veterinarian attends 7 case/day in their jurisdiction and also it contradicts the finding of Ahuja *et al.* (2001), who reported veterinarians in private practice attend six cases/day.

### 4. Vaccination percentage in a month

Majority (54.5%) of L.Is said 70 percent vaccination was achieved per month, however, equal percentage of i.e. 41.7% of V.Ss each reported they were able to achieve 70 percent and 75 percent vaccination per month. While the average vaccination achieved by MVU in the district was 72.17 percent. The independent sample t-test analysis suggests there is no significant difference between the views of L.Is and V.Ss in terms of vaccination percentage/month.

### 5. Service delivery place

81.8 percent L.Is and 91.7 percent V.Ss reported that they provide service in camp in MVU. Again cent percent respondents from both L.Is and V.Ss reported for doorstep provision of services. MVU is providing service at farmers' doorstep, which emphasizes its value. These results are similar to findings of Saravana (2006) [8], who reported all the veterinarians in private agencies reported doorstep provision of service.

### 6. Average distance covered to deliver service at farmers' doorstep

The average distance covered to deliver the services at farmers doorstep by both V.Ss and L.Is ranged between 50-90 Kms., which was again subdivided into 3 categories i.e. Less (50-56 Kms.), medium distance (57-63 Kms.) and high distance(64-70 Kms.). 36.4 percent of L.Is each replied for less and high distance covered to deliver services at farmers' doorstep. But in case of V.Ss, 41.7 percent of respondents reported that they were covering high distance to deliver service at farmers' doorstep. In pooled data, majority (39.1%) of V.Ss and L.Is reported for high distance covered followed by 34.8 percent reporting less distance covered to deliver services at farmers' doorstep, with a mean of 60.52 Kms. From Independent sample t-test analysis, it can be concluded that there is no significant difference between the respondents

in terms of average distance covered to deliver doorstep services. This result is in contrary to Saravana (2006) [8], who reported in private agencies veterinarians travelled minimum 100 km/day to deliver services at farmers' doorstep.

**7. Time spent on various activities**

Time spent on various activities on weekly basis was asked to both L.Is and V.Ss. Average time spent was calculated for all the L.Is ad V.Ss and total time spent per week on each activity was calculated. The L.Is revealed that average time spent was highest for prophylactic services (18.27 hrs. /week) followed by extension activities (13 hrs. /week) and curative services (6.09 hrs. /week). The V.Ss also reported that average time spent was highest for prophylactic services with mean 18.91 hrs. /week, followed by extension activities (13.91 hrs. /week) and curative services (6 hrs. /week). In overall sample, average time spent on prophylactic activities was found to be (18.6 hrs. /week), for extension activities (13.47 hrs. / week), followed by curative services (6.04 hrs. /week), breeding (3.95 hrs. /week) and diagnostic services (1.7 hrs. / week). Very little time was spent for administrative activities and staff meeting, which was 0.78hrs/week and 0.43hrs/week, respectively. The t test value indicates there is no significant difference between L.IS and V.Ss with respect to time spent per week on various livestock related activities. These findings are contradictory to the findings of Biradar (2009) [2], who reported veterinarians were devoting major portion of their time to curative services followed by breeding services, while on preventive services least time was spent.

**8. Types of farmers mostly avail the services of MVU**

It can be inferred from the table that majority (90.9%) of L.Is revealed that mostly small and large farmers were availing the services compared to landless and small farmers. Again similar observations were reported by majority (91.7%) of V.Ss of Kandhamal district. From the result it can be inferred that though free of cost doorstep service was being provided by MVU, landless and marginal farmers seems not cognizant about its importance and lack of interest among them for services offered by MVUs was also a major factor in not receiving the services of MVU. These results are in line with the results of Mirajkar *et al.* (2011) [4], who reported majority of large farmers preferred veterinary services provided by dairy cooperative as they had large livestock population, while contradicts the finding of Saravana (2006) [8], who reported mostly marginal farmers were availing the services of private agencies.

**9. Work load perception**

It can be inferred from the table that, a little more than half i.e. 54.5 percent of L.Is and 50 percent of V.Ss reported too heavy workload in MVU, while 36.4 percent L.Is and 33.3 percent V.Ss reported heavy work load in MVU.

In pooled sample, while majority (52.2%) of respondents perceived their work load as too heavy, followed by 34.8 percent respondents perceived that as heavy, only 13 percent of respondents reported that as average.

The too heavy workload perception of respondents by both V.Ss and L.Is might by due to a number of factors like more number of villages to be covered, per day service delivery in two villages and more number of cases per day, moreover, the most important factor in case of L.Is was their remuneration in MVU is very less i.e. only Rs. 5000/month, which could be a demotivating factor making them less interested towards this demanding job.

Further, as discussed earlier, in Kandhamal district, in MVU, no V.Ss was posted separately, but block level A.V.A.S (Additional Veterinary Assistant Surgeon) or B.V.Os (block veterinary Officers) were performing job for MVU as additional duties apart from treatment and administrative activities, in their respective dispensaries, therefore, work load is too heavy for them due to dual charges of MVU and veterinary dispensaries. Therefore, lack of staffs in MVU is an over burden upon the block veterinary officers to carry out both the role simultaneously. These findings are in contrary to Sasidhar (2002) [9], Ravi Kumar (2007) [7] and Biradar (2009) [2], who reported work load perception of service providers were heavy, but similar findings were there on the study of Saravana (2006) [8], who found out too heavy workload perception by most of service providers as they have to travel minimum 100 kilometers per day to attend the cases at farmers' doorstep.

**Table 1:** Work responsibility of Veterinary Surgeons (VSs) and Livestock Inspectors (LIs)

| **Distribution of service providers according to number of villages under coverage** | | | |
|---|---|---|---|
| No of villages under control | L.I. (n=11) | V.S. (n=12) | Total (N=23) |
| 65 | 2(18.2) | 2(16.7) | 4(17.4) |
| 70 | 1(9.1) | 1(8.3) | 2(8.7) |
| 75 | 3(27.3) | 3(25) | 6(26.1) |
| 80 | 3(27.3) | 4(33.3) | 7(30.4) |
| >80 | 2(18.2) | 2(16.7) | 4(17.4) |
| Mean ± S.D | 75.909 ± 7.006 | 76.25 ± 6.784 | 76.86 ± 6.734 |
| t test value | -0.119 | | |

**Table 2:** Distribution of service providers according to livestock population to be covered

| Livestock population | L.I. (n=11) | V.S. (n=12) | Total (N=23) |
|---|---|---|---|
| 10000 | 3(27.3) | 4(33.3) | 7(30.4) |
| 12000 | 4(36.4) | 3(25) | 7(30.4) |
| 14000 | 1(9.1) | 0(0) | 1(4.3) |
| 15000 | 2(18.2) | 5(41.7) | 7(30.4) |
| >15000 | 1(9.1) | 0(0) | 1(4.3) |
| Mean ± S.D | 12636.36 ± 2335.497 | 12583.33 ± 2274.696 | 12608.7 ± 2251.043 |
| t test value | 0.055 | | |

**Table 3:** Distribution of service providers according to handling of number of cases per month

| cases/month (in numbers) | L.I. (n=11) | V.S. (n=12) | Total (N=23) |
|---|---|---|---|
| 450 | 2(18.2) | 1(8.3) | 3(13) |
| 500 | 3(27.3) | 5(41.7) | 8(34.8) |
| 550 | 3(27.3) | 1(8.3) | 4(17.4) |
| 600 | 2(18.2) | 4(33.3) | 6(26.1) |
| >600 | 1(9.1) | 1(8.3) | 2(8.7) |
| Mean ± S.D | 540.909 ±73.546 | 550 ± 70.710 | 545.652 ± 70.570 |
| t test value | -0.302 | | |

**Table 4:** Distribution of service providers according to vaccination percentage per month

| Vaccination (in %) | L.I. (n=11) | V.S. (n=12) | Total (N=23) |
|---|---|---|---|
| 65 | 1(9.1) | 1(8.3) | 2(8.7) |
| 70 | 6(54.5) | 5(41.7) | 11(47.8) |
| 75 | 3(27.3) | 5(41.7) | 8(34.8) |
| 80 | 1(9.1) | 1(8.3) | 2(8.7) |
| Mean ± S.D | 71.81 ± 4.045 | 72.5 ± 3.988 | 72.173 ± 3.938 |
| t test value | -0.407 | | |

**Table 5:** Distribution of service providers according to their service delivery place

| Service delivery place | L.I. (n=11) | V.S. (n=12) | Total (N=23) |
|---|---|---|---|
| Camp | 9(81.8) | 11(91.7) | 20(87) |
| Door step | 11(100) | 12(100) | 21(91.3) |

**Table 6:** Distribution of service providers according to average distance covered to deliver services at farmers doorstep

| Average distance (in Km.) | L.I. (n=11) | V.S. (n=12) | Total (N=23) |
|---|---|---|---|
| Less (50-56) | 4(36.4) | 4(33.3) | 8(34.8) |
| Medium (57-63) | 3(27.3) | 3(25) | 6(26.1) |
| High (64-70) | 4(36.4) | 5(41.7) | 9(39.1) |
| Mean ± S.D | 60.636 ± 6.515 | 60.416 ± 6.894 | 60.521 ± 6.563 |
| t test value | 0.078 | | |

**Table 7:** Distribution of service providers according to time spent on various activities in MVU

| Services (Hr. /wk.) | L.I. (n=11) | V.S. (n=12) | Total (N=23) | t test value |
|---|---|---|---|---|
| Curative | 6.090909 | 6 | 6.043478 | 0.209 |
| Breeding | 3.909091 | 4 | 3.956522 | -0.218 |
| Prophylactic | 18.27273 | 18.91667 | 18.6087 | -0.461 |
| Diagnostic | 1.636364 | 1.833333 | 1.73913 | -0.422 |
| Administrative | 0.545455 | 1 | 0.782609 | -1.3 |
| Extension | 13 | 13.91667 | 13.47826 | -0.717 |
| Staff meeting | 0.363636 | 0.5 | 0.434783 | -0.636 |

**Table 8:** Distribution of service providers' according to view on which type of farmers' mostly avail the services of MVU

| Types of farmer | L.I.(n=11) | V.S.(n=12) | Total (N=23) |
|---|---|---|---|
| Landless farmers | 8(72.7) | 9(75) | 17(73.9) |
| Marginal farmers | 9(81.8) | 10(83.3) | 19(82.6) |
| Small farmers | 10(90.9) | 11(91.7) | 21(91.3) |
| Large farmers | 10(90.9) | 11(91.7) | 21(91.3) |

**Table 9:** Distribution of service providers according to work load perception

| Work load perception | L.I. (n=11) | V.S. (n=12 | Total (N=23) |
|---|---|---|---|
| Average | 1(9.1) | 2(16.7) | 3(13) |
| Heavy | 4(36.4) | 4(33.3) | 8(34.8) |
| Too heavy | 6(54.5) | 6(50) | 12(52.2) |

Figures in the parenthesis indicate percentage.

## Conclusion

MVU professionals with multifarious activities and a huge work load were serving the poor farmers at their doorstep. Hence MVU is an effective and ingenious of livestock service delivery should be replicated in all the states in India.

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