



Public service delivery survey in reference to FMD-control programme in Mathura

ANUNAYA JHA¹, RASHMI SINGH², AJAY PRATAP SINGH³ and K M L PATHAK⁴

U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan (DUVASU),
Mathura, Uttar Pradesh 281 001 India

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ABSTRACT

Public sector organizations or Government policies face common challenges in implementation of programme. Appropriate model for public service delivery should be chosen for the benefits of citizens. To control foot-and-mouth disease, Government of India is running FMD-Control Programme throughout the country. To evaluate effectiveness of service delivery mechanism of FMD-CP in Uttar Pradesh, present study was undertaken. It involved development of a structured questionnaire for beneficiary as well as service provider. Livestock owners (n=222) and Veterinary Officers (n=26) from Mathura district participated in the survey. Data was processed and analyzed. The success of FMD-CP was compared to neighbouring states of Rajasthan, Haryana and Punjab. The study concluded that majority livestock owners were aware about the disease and its control programme. Veterinary Officers were playing major role in dissemination of information. Vaccine was found to be safe and effective. FMD-CP was successful in states like Haryana and Punjab with good seroconversion in vaccinated animals and near zero occurrence of disease, but in UP seroconversion was poor and disease was reported regularly. Therefore, to improve FMD-CP in UP, it was concluded that design of the policy was optimum but there was a need for transformation in implementation practices of the policy. It included extensive information dissemination, release of adequate budget, timely intervention with sufficient staff for vaccination coverage, quality control of vaccine, issue of vaccination certificate and an independent audit system of implementation agency and screening agency.

Key words: FMD, FMD-CP, Public service delivery, Survey

Foot-and-mouth disease (FMD) is a devastating contagious viral animal disease affecting all susceptible cloven-footed animals having serious economic and societal effects on the livelihoods and sustainability of affected livestock farmers (Biswal *et al.* 2012). As per the estimates by the Indian Council of Agricultural Research (ICAR), New Delhi, direct loss (milk and meat) due to FMD is around ₹ 20,000 crores per annum. To prevent economic losses due to FMD and to develop herd immunity in susceptible animals, a location specific vaccination programme called FMD-Control Programme (FMD-CP) has been initiated by the Government of India since August 2003–04 covering the entire country. The State Governments provide other infrastructure and manpower to undertake FMD vaccination (Subramaniam *et al.* 2013).

As this programme involves publicity and mass awareness campaign, including orientation of State functionaries for implementation of scheme, identification of target animals, sero-surveillance / monitoring of animal population on random basis, mass vaccination, procurement

of cold cabinets and FMD vaccine, assessment of randomly collected samples of vaccines for their quality, virus typing in case of outbreaks and recording / regulation of animal movement from unvaccinated areas through temporary quarantine / check-posts, it is essential to obtain public service delivery surveys to assess the effectiveness in implementation of this programme by addressing the issues of both beneficiaries (livestock owners) and Veterinary Officers involved in the programme. The public service delivery survey will inquire whether the objectives of FMD-CP have been met satisfactorily or not.

Therefore, this work was carried out to conduct a public service delivery survey in a sample of bovine livestock owners in Mathura block of the district so as to determine the satisfaction levels amongst them with regard to FMD-CP. Based on the survey, suggestions were made to further improve FMD-CP from the customer's perspective. A feedback was also taken from State Animal Husbandry so as to understand the problem at the ground level in the implementation of this programme, and the way forward to successfully implement this ambitious programme of Government of India so that the dreaded disease can be successfully eradicated. Also, success of FMD-CP in UP was compared with neighbouring states of Rajasthan, Haryana and Punjab as there is free trans-border movement of animals from one state to other.

Present address: ¹IAS, Chief Development Officer, Aligarh (anunaya.jha@gmail.com); ²Professor and Head (madan_rs@rediffmail.com), ³Assistant Professor (drajay_vet@yahoo.co.in), Department of Veterinary Microbiology; ⁴Former Vice-Chancellor (pathakkml@yahoo.co.in), DUVASU, Mathura.

MATERIALS AND METHODS

FMD-CP was started in 16 districts of Western Uttar Pradesh including Mathura in 2003–04 and now covers the entire state. The major activities of the intensive programme component is to vaccinate all the eligible cattle and buffalo at six monthly interval, continuous FMD surveillance, reporting of outbreaks and effective measures to control and contain the disease (Pawar *et al.* 2010). Vaccination and collection of pre- and post-vaccination serum samples is done by State Animal Husbandry department and the Regional and Collaborative Centres participate in estimation of serotype specific antibodies and post-vaccination sero-conversion. Twenty four rounds of vaccination have been undertaken in Mathura.

Study area and sample population: The study included 27 villages in block Mathura, district Mathura, Uttar Pradesh. A sample population of 222 livestock owners was randomly selected from these villages. It included small farmers with average animal holding of four-to-five. Veterinary Officers (26) of State Animal Husbandry, UP, posted in different blocks of Mathura district were also included in the study.

Development of questionnaire for livestock owners and Veterinary Officers: A structured questionnaire was developed in Hindi language for livestock owners consisting mostly objective type questions. Questions included knowledge of livestock owners about FMD, its prevention / control, awareness for State and Central Government control programmes and means of social awareness. The questionnaire also involved on aspects of service provided by State Animal Husbandry department and the problem and suggestion for improvement. Similarly, a questionnaire was developed for Veterinary Officers consisting mostly objective type questions. Questions included public awareness means regarding FMD, its prevention and control, FMD-CP in their area, vaccination, coverage, sero-surveillance etc. It also included difficulties faced in implementation of programme and suggestions for strengthening FMD-CP.

Data processing and analysis: Data received in form of questionnaires was processed and analyzed on all the aspects for interpretation of the result.

Comparison of the programme from other states: The success of FMD-CP in Uttar Pradesh was compared to the neighbouring states of Rajasthan, Haryana and Punjab.

RESULTS AND DISCUSSION

Respondent 1 (Beneficiary-Livestock Owner): The response from 222 randomly selected livestock owners was analyzed and interpreted for different parameters. Most of livestock owners possessed buffalo (62%), followed by cattle (32%). Sheep and goat were in meagre number (4%) and there was no swine population. Most (76%) respondents were aware about this disease. Nearly half of respondents (48%) confirmed occurrence of disease in their animals. Most (79%) respondents reported no deaths from FMD.

Majority respondents (72%) were aware about FMD vaccine as a preventive measure. The mode of information for this awareness was mostly from Veterinary Officers (73%). Other means like newspaper and television (TV) was 12% and 11%, respectively. Radio played a minimal role (2%). Sixty eight percent respondents were aware about FMD-CP. The source of information for farmers was Veterinary Officers at first place with 69% and newspaper and TV at 16% and 12%, respectively. Other source was 3%. Most of livestock owners (67%) were aware about free vaccination done in cattle and buffalo biannually under FMD-CP. Again maximum coverage of dissemination of information was from Veterinary Officers (84%). TV, newspaper, radio and others contributed insignificantly at 10%, 4%, 1% and 1%, respectively. Majority respondents (65%) agreed with the vaccination undertaken by state AHD in their animals. 29% denied any vaccination done in their animals. 24% respondents confirmed the vaccination as a regular event, whereas 57% reported it as irregular event. Majority respondents (65%) had not participated in any goshthi related to animal health and management organized by state AHD. Majority respondents (68%) denied any goshthi organized in their area by state AHD. Most livestock owners (66%) confirmed to have vaccinated their animals under FMD-CP. A small number (12%) denied any vaccination done in their animals and 13% respondents abstained from answering the question. Majority respondents (73%) reported reduction in milk yield of their lactating animals after vaccination. Only 21% declined any such decrease. Most of animal owners (76%) reported a decrease in milk yield to one fourth of total production, whereas, 7% reported it to half and only 3% reported the loss to two third. Fourteen percent livestock owner reported no loss of milk and 39% of animal owner reported a decrease in milk yield in first week after FMD vaccination, whereas 36% reported loss till second week, 7% reported loss till 3rd week and 18% reported up to 4th week post vaccination. Majority of respondents (79%) reported no illness in their vaccinated animals after FMD vaccination. Only 18% reported sickness in their animals. Most livestock owners (90%) reported no death in their animals after FMD vaccination. Most (78%) reported no abortion in their pregnant animals after FMD vaccination. Only 9% reported occurrence of abortion in vaccinated animals. Fifty five percent respondents were aware of post-FMD complications. 66% of livestock owner were aware of the beneficial effects of vaccination, whereas 22% were unaware.

Respondent 2 (Service Provider-Veterinary Officer): The response from 26 Veterinary Officers posted in different blocks of Mathura district was analysed and interpreted for different parameters. All Veterinary Officers agreed completely in imparting the information to livestock owners in their area for control and prevention of FMD. Dissemination of information to the livestock owner was maximum by organization of *goshthi* (66%) followed by other sources (18%) and pamphlets (16%). On an average

Veterinary Officers had conducted 20 trainings in their blocks. All Veterinary Officers agreed completely in disseminating the information to livestock owners in their area for FMD vaccination and its associated myths. Dissemination of information to livestock owner was maximum from organization of *goshthi* (71%) followed by other sources (23%) and pamphlets (6%). All Veterinary Officers participated in the XIX phase of vaccination under FMD-CP (Sept–Oct 2016). Thirty one percent Veterinary Officers handled the report of FMD occurrence by self, whereas, 54% Veterinary Officers had sent the information to DFMD, Mukteswar. Forty two percent Veterinary Officer had sent the serum samples for testing whereas 50% had not. Only 27% Veterinary Officers were aware regarding the Collaborating Centre, DUVASU, Mathura where serum samples are sent for testing whereas, 69% respondents were unaware or they were sending it to their head office for further dispatch. Only 16% Veterinary Officers were aware of obtaining any report from testing centre and 32% had not received any kind of report whereas, 32% abstained from the question. Majority of Veterinary Officers (82%) reported nil FMD incidences. Only 14% reported FMD in less than 20 animals and 4% reported FMD in more than 20 animals during last 5 years in cattle and buffalo. All Veterinary Officers agreed for the availability of FMD vaccine in sufficient quantity from the headquarter. Most Veterinary Officers (81%) agreed on availability of cold chain facility in veterinary hospitals whereas, 15% showed a poor facility. Most Veterinary Officers (81%) agreed on availability of other items in sufficient quantity. Most Veterinary Officers (81%) were satisfied with vaccine quality. Most Veterinary officers (88%) found vaccine as highly effective. Sixty one percent Veterinary Officers found sufficient number of Paravets during FMD-CP.

Comparison of the programme from other states: The success of FMD-CP in Uttar Pradesh was compared to neighbouring states of Rajasthan, Haryana and Punjab. Haryana was the leading state with overall seroconversion of > 80% against all three serotypes of FMD virus and a drastic reduction in occurrence of disease. In Punjab, also overall seroconversion and herd immunity was good and incidence of disease was also down to near zero similar to Haryana. Entire Rajasthan was included in FMD-CP recently in 2015–16. In Uttar Pradesh, seroconversion was very poor and FMD outbreaks/incidences have been reported regularly (PD-FMD Annual report 2017–18; Singh *et al.* 2015).

Any government policy aimed for enhancement of animal health has to be simple, affordable, accessible, transparent, responsive and accountable (Singh *et al.* 2010). It should have clear goals/ objectives and time bound achievement. The policy must be critically evaluated from customer's perspective owing to the rising expectations of customers, budgetary constraints of government, transparency and social outcomes. Reforms in the Government policy aimed at improving service delivery have received considerable focus in recent times. Public

service delivery survey has become an important tool required to redefine, strengthen and to build integrated service delivery models (Muralidharan 2007).

A given policy includes design and implementation as its two integral components. FMD-CP policy is designed in a befitting manner for vaccination biannually in susceptible population with the licensed vaccine having approved protective ability without any side effects. The success of programme has been in Haryana and Punjab but Western UP has not been able to show comparable results. It therefore, appears that design of programme is flawless and needs no corrective measures; however, implementation needs to be re-looked. Haryana and Punjab being small states have small administrative units that can be controlled easily. Uttar Pradesh being a large state with long distances and greater area has its own difficulties. Also, UP faces challenges of transportation of animals through porous boundaries with other States.

Data generated has helped in making suggestions for improvement of policy. Livestock owners are sometimes unaware of impending vaccination programme and service providers are also provided directions / material on short notice. Hence, to obviate this, vaccination schedule should be declared well in advance and massive extension work / awareness drive should be taken up, before start of scheduled phase of vaccination. It can be in form of regular *goshthi*, meetings, regular visit of AHD staff, and use of audio visual aids / advertisements. At present, vaccination implementing agency is State and screening agency is ICAR-DFMD. Same agency is performing vaccination and collecting samples. Though, random sampling is done by ICAR-DFMD but its reach is limited. Therefore, an independent agency is required for the same. Serum samples collected from each district for assessing sero-conversion are sometimes not true representative of entire district. A strict monitoring system and strategy should be used for true representative samples. Constraint faced by state AHD officials of adequate and timely budget release should be solved. Paravets may be recruited for short periods for effective vaccination coverage of target population. Research data is available that supports effectiveness of combined vaccine over individual vaccine in livestock. Combined vaccination of FMD with haemorrhagic septicaemia (HS) may be undertaken to save labour, time and money. A strict monitoring system in animal transportation and movement is essential. With private vaccine manufacturers in play, effective quality control check of vaccine periodically is important. Vaccination certificate should be issued that can be used by the owner for claiming various benefits like, lower premium for health insurance of animals / loans from bank on reduced interest rate / subsidy on issue of agricultural input etc. to promote the programme.

Public sector organizations or Government policies face common challenges in the implementation of the programme in developing countries. A number of approaches can be undertaken for the transformation of public sector service

delivery. This is dependent on the need to focus on delivering better to the customers in best possible way. An appropriate model for public service delivery should be chosen focusing on the benefits for citizens and increasing awareness taking into account the constraints in terms of structure, capacity of people, public sector and finances.

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