

SHORT COMMUNICATION

PARTICIPATORY DISEASE SURVEILLANCE AS PANACEA TO THE BANE OF ANIMAL DISEASE UNDER-REPORTING IN NIGERIA: A COLLABORATIVE REPORT

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Abstract

Under-reporting of animal disease outbreak is a common feature in most developing countries with poor disease reporting system including Nigeria, where majority of animals are held by rural livestock farmers. Participatory Animal Disease Surveillance (PDS) a participatory epidemiology/epizootiology method which involves local rural livestock farmers, was developed in Africa as an accurate and rapid method to understand the distribution and dynamics of Rinderpest and has been recognized as a panacea to the existing bane of animal disease underreporting in third world countries by improving disease reporting, monitoring and surveillance in many developing countries. This paper is a collaborative report of three Nigerian veterinarians in the academic, research and government services respectively towards finding a panacea to the bane of poor disease reporting and its attendant consequences. A study was conducted in 2007 to evaluate the effectiveness of the operational system of the animal disease reporting system in Oyo State, Nigeria, one of the 36 States in Nigeria, for the period 1995 to 2005. Generally the operations of the system in Oyo State are found to be ineffective in many aspects and characterized by late reporting, under-reporting and inaccurate data. Between 2008 and 2009, PDS was applied in Nigeria under the Early Detection, Reporting and Surveillance for Avian Influenza in Africa (EDRSAIA) Programme and found to be logistically inexpensive, flexible, leads to timely control of diseases and can easily be integrated into the existing National Animal Diseases Information and Surveillance programme. At the Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Nigeria, PDS have been incorporated into the postgraduate curricula since 2004. Other Veterinary Faculties in Nigeria are challenged to also incorporate PE/PDS in their curricula as part of needed training efforts relevant to addressing the bane of existing poor disease reporting and surveillance in Nigeria.

Introduction

Participatory (animal) Disease Surveillance PDS (also known as Participatory Disease Searching PDS), evolved in the Pan African Rinderpest Campaign (PARC) (1986-1998) and was developed in Africa as an accurate and rapid method to understand the distribution and dynamics of Rinderpest. It is based on Participatory Epidemiology/Epizootiology PE methods such as semi-structured interviews, the use of probing questions to delve deeply into local knowledge about Rinderpest, mapping and time-lines (Mariner and Flanagan, 1996; Mariner, 1999, Catley and Mariner 2002).

PDS has been recognized and applied as a panacea to the existing bane of animal disease underreporting in third world countries such as Pakistan (Manzoor *et al*, 2005) and Indonesia, where the Participatory Disease Surveillance and Response (PDSR) has evolved significantly towards the prevention and control of not only HPAI, but also other zoonotic and priority animal diseases (Azhar *et al* 2010). In Nigeria, PDS has been applied in Nigeria's Early Detection, Reporting and Surveillance for Avian Influenza in Africa (EDRSAIA) Programme, being implemented in 6 other West African countries: Togo, Benin, Sierra Leone, Liberia, Burkina Faso and Cote D'Ivoire (Jost *et al* 2009). The major objective in Nigeria was the integration of PDS into the existing National Animal Diseases Information and Surveillance (NADIS) network (Anzaku 2009).

Materials and Methods (1)

A study was designed to evaluate the effectiveness of the operational system of the Animal Disease Reporting System ADRS of Oyo State, Nigeria, one of the 36 States in Nigeria (Bolajoko 2007) by examining the ACCURACY of data, NOTIFICATION EFFI-

CIENCY NE/COMPLETENESS (ADEQUACY) in recording and reporting of the data and TIMELINESS of the information flow for the period 1995 to 2005; on six animal disease of the list "A" Notifiable diseases, namely: African swine fever (ASF), Foot and mouth disease (FMD), Contagious bovine pleuro pneumonia (CBPP), Avian Influenza (AI), Rinderpest and Peste des Petit Ruminants (PPR). In addition, retrospective survey of relevant data and open-ended interview was utilized when necessary.

Materials and Methods (2)

Under Nigeria's Early Detection, Reporting and Surveillance for Avian Influenza in Africa (EDRSAIA) Programme, in October 2008 and February 2009, participants (16 and 4 respectively) were trained on basic concepts and techniques of PE for 2 weeks followed by refresher training in June 2009 for 5 days (7).

Though targeted at Avian Influenza, data were collected through a broad, unbiased framework of open-ended enquiries. Principal tools used were:

- i. Semi-structured interviews where respondents were asked to identify the principal animal health problems they encounter or have encountered in the past, which are further probed, and
- ii. Proportional piling, matrix scoring, seasonal calendars, mapping and transect walks/observations to understand the priorities of farmers, livelihood impact of diseases and their epidemiology.

As at 15th May 2009, a total of 239 villages in 23 Local Government Areas of the 773 LGAs in Nigeria participated in the PDS EDRSAIA activities.

Results (1)

Table 1 shows that in Oyo State, Nigeria, one of the 36 states in Nigeria, for the period of 10 years, there were a total of 11 reported disease outbreaks:

- One (1) each of CBPP and FMD in 1995,
- No report in 1996-2000, 2002-2003,
- Six (6) outbreaks of ASF in 2001,
- One (1) outbreak of FMD in 2004 and
- two (2) outbreaks of FMD in 2005 (but with detailed trace back investigation, it was discovered that the two recorded FMD outbreaks was a dual notification, that is, multiple reporting of a single outbreak).

The speed of information flow was greatly hindered by the bureaucracy associated with reporting of disease outbreak from the officer-in-charge at the grass root, to the State and finally the Federal (NADIS), problems of communication and transportation and problem of time wasted waiting for laboratory result.

Generally Oyo State was found to have been grossly ineffective in active reporting of animal diseases between 1995 and 2005 and could not serve as an early-warning mechanism for prediction, prevention and control of disease outbreaks

Table 1: Record of outbreaks of the diseases selected for case study for the period 1995-2005.

Year	Disease	Date Of Occurrence	Date Reported	Location	Morbidity	Mortality
1995	CBPP	N.A	26/9/1995	Unknown	N.A	N.A
	FMD	N.A	6/9/1995	Unknown	N.A	N.A
1996 to 2000	N.A	N.A	N.A	N.A	N.A	N.A.
2001	ASF	15/5/2001	17/9/2001	N.A	N.A	N.A
	ASF	N.A	27/8/2001	N.A	N.A	N.A
	ASF	N.A	29/8/2001	N.A	N.A	N.A
	ASF	16/8/2001	27/8/2001	N.A	N.A	N.A
	ASF	19/10/2001	28/10/2001	N.A	N.A	689 from
	ASF	30/10/2001	23/11/2001	N.A	N.A	100 Pig farms.
2002	N.A	N.A	N.A	N.A	N.A	N.A
2003	N.A	N.A	N.A	N.A	N.A	N.A
2004	FMD	16/8/2004	24/8/2004	N.A	N.A	3
2005	2 Cases of FMD	10/8/2005	6/9/2005	N.A	N.A	N.A

N.A = Information not available

Results (2)

From the 2008-2009 EDRSALA programs in Nigeria, major findings indicated that awareness of farmers on AI was high and they were able to describe the clinical signs. In addition, the study showed that

- PE can play a major role in determining diseases priorities, decision making and control/prevention/eradication options
- PE has led to greater interaction especially with rural farmers who showed willingness to cooperate in all Government disease control interventions.
- Farmers' knowledge on various channels of disease reporting has been improved.
- PDS is logistically inexpensive, flexible and will lead to timely control of diseases
- PDS is flexible and can easily be integrated into the existing NADIS
- PE when combined with conventional medical and veterinary diagnoses can assist both professionals gain a better understanding of Veterinary/Public health issues and dynamics.

Conclusion

FAO, OIE and WHO recognize livestock owners' training through concepts such as participatory approaches to learning as an important tool in the development agenda, which if successful, can fully address problems surrounding zoonosis prevention and hygiene. This has led to the production of the *FAO-OIE-WHO Collaboration. A Tripartite Concept Note*. This tripartite relationship envisages complementary work to develop normative standards and field programs to achieve 'One Health' goals; and advocates for effective strategies for improving national, regional and

community level pandemic preparedness and response that should be further developed or refined.

Incorporating participatory approaches to epidemiology into university curricula will have a long-term positive impact on the veterinary profession (Jost *et al* 2007). At the Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Nigeria, Participatory Epizootiology and PDS have been incorporated into the postgraduate curricula since 2004 and the first author has supervised eight PE/PDS related postgraduate projects since then. Other Veterinary Faculties in Nigeria are challenged to also incorporate PE/PDS in their curricula as part of needed training efforts relevant to addressing the bane of existing poor disease reporting and surveillance in Nigeria.

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