

Utilization and Determinants of Multi-Sectoral Approach in Zoonotic Disease Surveillance Among Animal and Human Healthcare Workers in Nakuru County, Kenya

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Joint data collection, analysis, interpretation and sharing of zoonotic data was 16%. The factors associated are sector, education level, data storage, sensitization, trainings, coordination, organizational and financing.

BACKGROUND

Zoonoses aggravate fast causing a myriad of sequels, and hence need for early detection, timely response and control. Multisectoral approach in zoonotic disease surveillance (MZDS) bringing together surveillance officers in both humans and animal into Joint data collection, analysis, interpretation and sharing ensures optimal resource utilization and timely response. With scanty information available, this study aimed at determining the level of utilization of MZDS and associated determinants among animal and human healthcare workers in Nakuru county which is a hot spot for zoonoses like Anthrax, Rabies, Brucellosis and Rabies.

METHODS

Cross-sectional study design using a semi-structured pretested interviewer-administered questionnaire was used to collect quantitative data from 102 frontline animal and public health workers whereas key informant interview guide was used to collect data on institutional factors (funding, space, priorities, staffing, MZDS plans, political will). Quantitative data was cleaned in excel and exported to R 4.3.1 Software for descriptive and inferential statistics. Hearing about MZDS and the regularity of carrying out joint data collection, analysis, interpretation and sharing with other sectors formed the basis for inferential statistics. Those who frequently and jointly collected, analyzed, interpreted and shared data were termed as utilizing MZDS. Chi-square test (used for demographic variables) and t-test (used for awareness, attitudes and practices variables) were used to determine the association with utilization of MZDS. Statistical significance was set at a p-value < 0.05 and 95% CI. Qualitative data was analyzed manually using MS Excel.

RESULTS

Of the 102 participants, 73.5% (N=75) had heard about MZDS, among whom the level of utilization was 16% (N=12/75), the rest 84% (N=63/75) had either never utilized or only utilized it during outbreaks. Education level ($\chi = 3.889$, df = 3, p = 0.026), sector ($\chi = 1.657$, df = 3, p = 0.023) were significantly associated with utilization of MZDS. Individuals from health sector, those with diploma and undergraduate education were more likely involved in MZDS as opposed to those with certificate and postgraduate education. Being aware of what MZDS entails (t= 2.269, df = 15.05, p = 0.038), Sensitization (t = 2.466, df = 73, p = 0.016), training (t=2.227, df = 3, p = 0.029), believing that infrastructure for MZDS had improved following devolution (t= 4.209, df= 73, p = 0.001) were associated with higher MZDS utilization. Having a budget and storing data on MZDS were also associated with higher MZDS utilization.

Key informants noted that, "... multi-sectoral collaboration has no separate resources, departments use their own routine resources e.g., staff, vehicles, computers, emails and budget".

RESULTS CONTINUED

Association between awareness, attitudes, practices towards MZDS & utilization of MZDS.					
Variable	Utilized MZDS (16%)	Didn't utilize MZDS (84%)	t-test	Df	p-value
Awareness					
Organizational structure of MSDS at subcounty?					
Correct	3 (4.0%)	7 (9.3%)			
Incorrect	9 (12.0%)	56 (74.7%)	-1.017	3.132	0.327
Respondents who correctly listed the five priority zoonotic diseases in Kenya					
Correct	2 (25%)	6 (75%)			
Incorrect	10 (14.9%)	57 (85.1%)	-0.728	3	0.469
Ranking priority zoonoses in-terms of severity, epidemic potential & socio-economic burden					
Correct	1 (33.3%)	2 (66.7%)			
Incorrect	11 (15.3%)	61 (84.7%)	-0.829	3	0.410
Attitude					
I am an important actor in Multisectoral approach					
Agree	12 (16.2%)	62 (83.8%)			
Neutral	0 (0)	1 (100%)	0.434	73	0.666
Practices					
Proportion of Respondents who received information on MZDS					
Never	1 (12.5%)	7 (87.5%)			
Rarely	5 (11.4%)	39 (88.6%)			
Frequently	6 (26.1%)	17 (73.9%)	-1.339	3	0.185
Regularity of storing data and information on MZDS					
Never	0 (0)	14 (100%)			
Rarely	4 (8.9%)	41 (91.1%)			
Frequently	8 (50%)	8 (50%)	-4.211	3	0.001
Budget for MZDS in the subcounty					
Never	6 (8.0%)	57 (76.0%)			
Rarely	4 (5.3%)	5 (6.7%)			
Frequently	2 (2.7%)	1 (1.3%)	-2.422	11.9	0.032

CONCLUSIONS

MZDS should be a major issue of concern in sub-Saharan Africa for early disease detection. Zoonoses can aggravate fast causing a myriad of sequels, and hence the need for early detection, timely response and control. From this study, there is a low level of MZDS. The factors for the low utilization include; sector, education level, data storage, sensitization, trainings, lack of proper coordination, organizational and financing mechanisms. The National and the county government need to pay more attention towards MZDS activities through financing MZDS activities, sensitization and training of staff. There is also need to provide physical infrastructure like mobility means, office space and its infrastructure as well as provide information and communication technology for MZDS.

ADDITIONAL KEY INFORMATION

Additional Resources: <https://doi.org/10.5061/dryad.g1jwstqzm>

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