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PROBLEMS AND SUGGESTIONS REGARDING DISEASE EARLY WARNING SYSTEM, COMMUNICATED BY HEALTH CARE WORKERS OF DISTRICT SWAT KHYBER PUKHTOONKHWA

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ABSTRACT

BACKGROUND: The Disease Early Warning System (DEWS), implemented by the World Health Organization (WHO) in collaboration with the Ministry of Health and National Institute of Health, is the main national surveillance system to detect and respond to infectious disease epidemics in Pakistan. The DEWS was initially implemented in response to natural disaster and displacement emergencies in Pakistan, most notably the 2010 floods. However, the system has now expanded to cover about 107 million people of Pakistan's population. Its approaches for outbreak detection include immediate alert reporting and weekly data collection from about 2800 health facilities.

OBJECTIVE: To find out what problems and suggestions do the trained Health Care Workers communicate regarding Disease Early Warning System.

MATERIAL & METHODS: This cross-sectional study was conducted on sixty nine Health Care Workers trained on Disease Early Warning System, from twenty nine randomly selected Basic Health Units and Civil Dispensaries in District Swat in the Khyber Pakhtunkhwa province, Pakistan. A structured interviewer administered questionnaire was used. Within each selected Health Care Facility, we aimed to interview the medical officer or technician in charge who is the designated focal point for DEWS or surveillance/outbreak control activities. At each Health Care Facility all respondents (if more than one) were interviewed simultaneously in a focus group discussion.

RESULTS: 47(68.1%) of the respondents communicated no problem, frequently mentioned barriers to health facility were communication problems 9(13.1%), shortage of mane power 4 (5.8%), Irrelevant issues 4(5.8%), Plotting watch chart 1(1.4), DEWS & DHIS forms 1(1.4), English language 1(1.4%) and no response 1(1.4%)

CONCLUSION: Improved means of communication needs to be introduced. Performance based awards in the form of appreciation certificate may be considered. Refresher and on job trainings are needed.

KEY WORDS: Surveillance, Health Care Worker, Pakistan.

INTRODUCTION

DEWS was first set up in 2005 in earthquake-affected districts. The DEWS was reinstated and expanded to additional affected districts during ensuing crises, with the greatest expansion (27 new districts) occurring in July-September 2010 after the countrywide flood emergency. As of 18 March 2011 (the starting date of this evaluation), 93 districts in all provinces of Pakistan (including three tribal agencies in FATA and Islamabad Capital Territory) were included in the DEWS, covering an estimated population of > 107 million or about 57% of the total population of Pakistan, projected at 187 million[1].

The DEWS collects weekly aggregate data for the following diseases and syndromes: Priority epidemic-prone illnesses: Acute watery diarrhea/suspected cholera, bloody diarrhea,

suspected malaria, suspected measles, suspected meningitis, acute jaundice syndrome, acute flaccid paralysis, and suspected hemorrhagic fever; for malaria, recognizing that the proportion of parasite-positive tests (blood slides or rapid diagnostic tests) is a useful and timely epidemic indicator, the number of tests performed and the number positive are also collected.

Diseases with high burden "that make up a large portion of the out-patient visits to a health facility[2], or that "include some other epidemic-prone diseases which are more difficult to define[2]. (E.g. rotavirus, influenza): other acute diarrhea, acute upper respiratory infection, acute lower respiratory infection, unexplained fever >38.5°C.

In 2009, a technical working group set up by WHO reviewed evidence on the design and implementation of early warning alert and response network systems (EWARN) for disease surveillance in humanitarian emergencies, and agreed on the urgent need for documentation and evaluation of ongoing EWARN systems, so as to build the evidence basis and inform the development of global guidelines, currently under finalisation[3].

Any occurrence that causes damage, ecological disruption, loss of human life or deterioration of health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area is called a disaster[1]. Disasters create conditions like homelessness, displacement, contamination of air, water and food that cause health risks for the affected population[2]. Disasters may have direct and indirect impacts on the population's health and healthcare system[3].

All diseases on DEWS list have case definitions classified as suspected, probable and confirmed[5] and also specified threshold levels. When that specific level for a specific disease is reached then a wake-up alert is raised, which is responded immediately by DEWS personnel[6]. Health facility staff who first encounters a patient and then provides the daily or weekly data are the backbone of this surveillance system and that is why they are called the "Eyes and Ears" of the system[7].

Disease surveillance appears as an inevitable phenomenon during disasters. Surveillance is the ongoing systematic collection, analysis and interpretation of outcome specific health data, closely integrated with the timely dissemination of these data to those responsible for preventing and controlling disease or injury[7]. It is carried out to monitor changes in disease frequency or prevalence of risk factors. Disease surveillance is most frequently conducted for infectious diseases[8].

In 1995, world health assembly of WHO passed a resolution that called for meeting health needs of affected populations to alleviate their sufferings during immediate post disaster period. For this purpose WHO restructured its old Emergency and Humanitarian Action(EHA) program and it was in 1996 when EHA responded in two member countries; DPR Korea during floods and Bangladesh duringTornado[9]. For epidemic surveillance, EHA has established Disease Early Warning System (DEWS) which is the ongoing systematic collection, analysis and interpretation of data on diseases for planning, implementing, and evaluating public health interventions[10].

In September 2009 DEWS was established in district Swat. A total of one hundred and twenty seven individuals including medical and paramedical staff from the heath facilities of Department of Health (DoH) and all the medical and paramedical staff of Non-Governmental Organizations (NGOs) were trained[11]. These trained personnel were responsible for detection, registration and reporting of epidemic prone diseases. Timeliness and completeness of reporting of these diseases ensured by DEWS is the single most important step towards its control. Proper

reporting ensures timely detection and intervention by concerned staff. Credibility of reporting is directly dependent on the knowledge and practice of health care workers trained by EHA team.

In District Swat seventy health facilities are under DEWS reporting since October 2009. No literature on DEWS in district swat is available and the only source of information is EHA public health officer's generated weekly morbidity and mortality reports (WMMRs).This study is an attempt to find out what problems and suggestions do the trained Health Care Workers (HCW) communicate regarding DEWS system. This will provide an insight to the concerned higher authorities to address and redress their problems in order to strengthen DEWS system.

METHODOLOGY

This cross sectional study was conducted on the Health Care Workers (HCWs) of First Level Care Facilities (FLCFs) including Basic Health Units (BHUs) and Civil Dispensaries (CDs) in district Swat of Khyber Pakhtoonkhwa from October 2010 to January 2011. HCWs included Doctors, Medical Technicians (MTs), Dispensers and Lady Health Visitors (LHVs). In DoH those with two years diploma and six months certificate course are inducted as Medical MTs and Dispensers respectively. NGOs induct both of these as Dispensers. All NGOs employees were guided that their designation should be based on their qualification and not the title given by the NGO. There are fifty eight FLCFs in Swat. According to WHO, at least 25-30 % of health facilities in the area should be studied for assessment[11]. Out of these fifty eight facilities, twenty nine (50%) were randomly selected.

From each of those twenty nine FLCFs, all HCWs trained on DEWS were taken as respondents. Final sample size so obtained was sixty nine. Simple random sampling without replacement was used to select FLCFs. Then among those FLCFs, purposive sampling was done and all HCWs who were trained on DEWS were taken as respondents. HCWs trained on DEWS but who showed resentment at any stage and HCWs trained on DEWS, who worked in a facility that was not under DEWS reporting system, or was inaccessible in terms of security clearance, were excluded from study. A structured interviewer administered questionnaire containing pre coded close-ended and very few open ended questions was used as a data collection tool. Data was collected by four research associates not working in the health department of district Swat. Data entry and analysis was done using SPSS version 16. Descriptive statistics were computed for all variables, including frequencies and percentages for categorical variables and the 95% confidence intervals (CI) using online calculator[12].

RESULTS

A total of sixty nine Health Care Workers (HCW) from twenty nine health facilities were interviewed during the study. These included all those HCWs who were trained and involved in DEWS data collection and reporting. Twenty nine First Level Care Facilities (FLCF) including four Civil Dispensaries and twenty five Basic Health Units were visited during the study.

DESCRIPTION OF STUDY PARTICIPANTS:

Of the total respondents, 43(62.3%) were from Department of Health (DoH) and 26(37.7%) were employed by Non-Governmental Organizations (NGOs).

Table 01: Description of study participants (%age)

Health Facility	Doctors	MTs	LHVs	Dispensers	Total
Civil Dispensary	3	1	1	12	**17**
Basic Health Unit	14	33	3	2	**52**
Total	**17**	**34**	**4**	**14**	**69**

PROBLEMS FACED BY HEALTH CARE WORKERS:

These were statements made by the HCWs regarding problems identified by them while practicing DEWS.

Table 02: Problems faced by Health Care Workers

Response of HCW	#	%
No issue	47	68.1
Communication issues	9	13.1
Shortage of main power	4	5.8
Irrelevant issues	4	5.8
Plotting watch chart	2	2.8
Unmatched DEWS & DHIS forms	1	1.4
English language	1	1.4
No response	1	1.4

Table 03: Suggestions submitted by Health Care Workers.

Suggestions	# of Respondents (HCWs)	%
Incentives for DEWS	14	21.73
Arrangement of Refresher trainings	11	15.94
Induction of more staff	10	14.49
Performance based awards heard and quality workers	7	10.14
Frequent supervision supervisor	6	8.69
Keep status quo	6	8.69
Submission of report on daily basis	4	5.79
Submission of report on weakly basis	4	5.79
Tailing of DEWS report with DHIS	3	4.34
Identification of case definition by all DEWS	2	2.89
Reduction in DEWS priority disease list	2	2.89

DISCUSSION

Current pool of knowledge about DEWS surveys in Pakistan is based on two studies; one at District Bagh, Azad Jamu Kashmir (AJK) published in 2006[13] and other published in August 2009[14] providing information only about the impact of DEWS on disease alerts and outbreak controls in Pakistan. AJK study is mainly based on the assessment of thirteen First Level Care Facilities providing very little information about the knowledge and practices of concerned Health Care Workers (HCWs) [13]. As for District Swat of KPK is concerned, there is no available research on the topic except a parallel study conducted by the author published elsewhere[10].

Number of respondents employed by Department of Health (DoH),were more than that of NGOs. It is because all FLCFs are run by DoH and every selected health posts are managed by NGOs in District Swat. Majority of the respondents were Medical Technicians(MTs).At FLCF level there was only one medical technician from DoH but facilities where services were provided by NGOs, more than one MTs were present.Only four Lady Health Visitors (LHVs) were included in this study. Majority of LHVs at FLCFs were not trained and reason according to WHO official was that doctors and MTs were trained on priority basis.

Less than seventy percent of HCWs were comfortable with following DEWS protocol and faced no problem. In contrast ninety five percent of involved HCWs in Bagh study were not satisfied with the monitoring of DEWS[13].Those with communication problems had to travel long distances before they could submit weekly reports. Telephone or cell phone facilities were not available in those areas. HCWs were overburdened by DEWS due to the shortage of manpower. Plotting weekly watch chart plays an important role in the timely detection of outbreak. Though a small proportion of HCWs faced problems in plotting weekly watch chart, it can be regarded as an important issue. English language is not declared as an issue by the majority but one. DEWS weekly form and DHIS monthly forms don't match in terms of priority diseases and age wise distribution. This poses confusion and extra labour on the part of health workers. (Table 02).

Some respondents suggested that incentives should be given to those reporting DEWS data to WHO. Provision of incentives has always

been a controversial issue. Some authorities suggest that incentives can adversely affect the performance of workers[15]. A possible explanation might be low performance as a result of incentive withdrawal due to any reason. Performance based certificates could be considered as an alternative to monetary incentives. Many concepts and terminologies in DEWS are volatile and frequent refresher trainings could help health workers to recall alert thresholds and case definitions.

In DoH those with two years diploma and six months certificate course are inducted as MTs and dispensers respectively. NGOs induct both of these as Dispensers. All NGO employees were guided that their designation should be based on their qualification and not the title given by the NGO. A person with two years diploma and working with NGO might have declared himself as Dispenser. Only four LHVs were included in this study which may not truly represent all LHVs.11.6% of respondents were not able to plot graph on weekly watch chart[10] but only 2.9% of them declared it as a problem.

CONCLUSION

DEWS is an effective tool for detection and control of epidemic prone infectious diseases. Health Care Workers are the "Eyes & Ears" of this system. If "Eyes & Ears" are working properly, there is no reason that the body of DEWS will not work properly. Majority of FLCFs in upper Swat are hard to reach and out of contact but still they manage to follow DEWS protocol. Improved means of communication needs to be introduced. Provision of incentives is an old issue and is always brought under discussion. Some authorities have rejected this demand as it adversely affects efficiency and devotion of the staff involved[15]. If not in monetary terms, performance based awards in the form of appreciation certificate can be considered. Periodic on job trainings and officially conducted refresher trainings on DEWS need to be introduced.

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