Pak Armed Forces Med J 2006; 56(4): 361-365

PRESENT SCENARIO OF DISEASE EARLY WARNING SYSTEM IN DISTRICT BAGH (AZAD KASHMIR)

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ABSTRACT

Background: Disease Early Warning System (DEWS) is a programme by which health workers can detect signs of an epidemic at an early stage in order to prevent its occurrence or expansion. It is a cost effective and sustainable programme especially in the developing countries like Pakistan, where infectious diseases cause a significant magnitude of morbidity, and mortality in the country. The objective of this study was to assess the practice of DEWS in district Bagh of Azad Jammu & Kashmir and suggest ways and means to improve its practice in future.

Methods: It was a cross sectional descriptive study and was conducted in thirteen First Level Care Facilities (FLCFs) of the district where DEWS was in operation. Questionnaires were designed to collect information about present scenario of practice of the system and a checklist was also prepared for physical verification.

Results: The study revealed that most of the health personnel dealing with DEWS were not trained properly and many facilities were not having even essential "case definition" documents. Some of the health facilities were deficient in recording and reporting materials. 90% of laboratories of health centres/hospitals/clinics were not having even containers for getting samples and transport media to carry to referral laboratories. Some FLCFs were not having laboratory facility at all. 95% personnel involved in DEWS were not satisfied by the present ways of monitoring by the supervisors.

Conclusions: For better functioning of DEWS, following measures are suggested: (a) Proper training of the health personnel about DEWS should be carried out. (b) Provision of DEWS tools to each facility should be ensured. (c) Regular, effective and efficient monitoring of all facilities should be done.

Keywords: Disease early warning system, district Bagh Azad Kashmir, FLCFs

INTRODUCTION

WHO has established outbreak verification mechanism whose coordinating cell is located in Geneva. Its aim is to improve epidemic disease control by actively collecting and verifying information on reported outbreaks. Up to January 2005, over 850 outbreak reports were investigated and information disseminated worldwide as observed by National Institute of Health, Islamabad.

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The frequency of epidemics in Pakistan necessitates the presence of a system that is capable of forecasting epidemics in time. WHO proposed an early warning system action plan for prediction and prevention of epidemics in 1996 in Pakistan. The Epidemics Investigation Cell as a component of DEWS was established at National Institute of Health (NIH) with assistance of WHO in January 1998. DEWS is being gradually introduced to all the districts of Pakistan to build a capability of health personnel at the most peripheral level for early detection of epidemics [1]. Most of the epidemic causing communicable diseases selected for DEWS

have an average incubation period of one week. Thus weekly assessment of disease incidence is crucial for detection of outbreaks. DEWS is a special form of surveillance in which fifteen epidemic prone diseases are included for prompt reporting [2].

In Pakistan, the Health Management Information System (HMIS) is able to collect, process, analyze and provide feedback on all health related data. HMIS is currently generating information that flows directly form First Level Care Facilities (FLCFs) to the district, then to provincial and finally to Federal level [3]. FLCFs include Basic Health Units (BHUs), Rural Health Centres (RHCs) and Outpatients Departments (OPDs) of hospitals. For the purpose of surveillance and outbreak prediction, DEWS is operational at FLCFs of health system and is an integral part of district HMIS. Under DEWS, one medical officer and one health technician/other paramedics at each health facility are given training to focus on suspected signs and symptoms rather than probable or confirmed cases [4].

In Azad Kashmir DEWS has been launched jointly by NIH Islamabad and WHO since October 2001. From then onwards it is operational in seven districts of Azad Kashmir including district Bagh, where this study was conducted to assess the practice of DEWS in the district. A total of 143 health facilities existed in District Bagh before earthquake (table-1).

DEWS – A Special form of Surveillance

The term surveillance is derived from French word meaning "to watch over with great attention, authority and often with suspicion". When it is applied to public health it can be defined as "the continuous scrutiny of factors that determine the occurrence and distribution of disease and other condition of ill health [5]. Surveillance includes the collection, analysis, interpretation and distribution of relevant data for action. Elements of surveillance are applied to aid in detecting epidemics and in prevention and control of infectious diseases. Public health surveillance uses established data collection procedures. This approach uses a minimum of data items and is intended to detect any epidemic in time to control and prevent the health problems [6] (fig. 1).

METHODOLOGY

Typically one Medical Officer (MO) and one lab technician/other paramedic at each health facility can easily handle DEWS. The MO is trained in data extraction from the clinical register and how to chart these data on special DEWS form daily and analyse them weekly. The lab technician is trained in sample (blood, urine, stool etc.) collection, proper handling and despatch of samples as well as in preliminary lab diagnostic procedures. Until August 2005, 2350 health personnel have been trained for DEWS by NIH Islamabad in Pakistan including Azad Kashmir [7].

If the MO during his daily dealing with patients, encounters a case of probable Polio, Congo Crimean Haemorrhagic Fever, Cholera, Plague, Dengue, Diphtheria, Pertussis or any other disease specified for prompt reporting he is obligated to immediately call District Health Officer. Other diseases in addition to the diseases listed above are Measles, Meningitis, Malaria, Hepatitis, Influenza, Neonatal Tetanus, Typhoid and HIV/AIDS. On the same day as MO charts the weekly data, he simply eyeballs the graph to see if there is any unusual increase in occurrence of the charted diseases [8].

Doubling of the cases (for any of the epidemic diseases) during a current week as compared to the previous week warns the MO and he begins his investigation to see if there is an epidemic in the offing. From January 1998 to July 2005, NIH has recorded 274 alleged or real outbreaks some of which were investigated and action taken by virtue of DEWS [9] as shown in (table-2).

A questionnaire was designed to collect information about present scenario of practice of DEWS. Data was collected with the help of mostly structured questionnaire. Similarly a checklist was also prepared for physical verification and check. Data was mainly processed by hand sorting and tallying because this was considered more appropriate.

RESULTS

A total of 20 respondents were interviewed during the study for assessment of implementation and functional status of DEWS. Out of these 20 personnel, 7 (35%) were MO, 7 (35%) were Dispensers, 2 (10%) were Rural Medical Assistants, 4 (20%) were Lab Technicians.

Out of 20 respondents, 5 (25%) were not familiar with DEWS at all. 2 (10%) respondents once got training for the functioning of this system (fig. 2). 2 (10%) respondents were having 'Case Definition' Document and 16 (80%) respondents were able to diagnose the cases of disease enlisted in DEWS. All 20 (100%) respondents stressed the need for more training.

Out of 20 Health Facilities, Weekly Watch Chart was present in 10 (50%). Only 10 (50%) out of 20 Health Units, recording and reporting material was available. Out of two GPs, one had not even filled the recording/reporting form so far.

Out of 20 Health Units, only in 7 (35%) Health Units, lab facility was available. Out of 7 Health Units including those where laboratory facility was present, 2 (50%) were lacking in containers for sample collection and transport media. 15 (75%) among 20 respondents knew about the specimens required for different infections. 18 (90%) respondents were not using lab facility for diagnosis of diseases enlisted in DEWS.

Regarding their ability to detect epidemics 4 (20%) respondents claimed that they were able to detect epidemics. 4 (20%) out of 20 respondents were observing Weekly Watch Chart for prediction of epidemics. Most of them (63%) were not having Weekly Watch Chart. 15 (75%) of respondents suggested that some forms of incentives should be given to health workers for reporting outbreaks/epidemics.

Twelve (60%) respondents were recording the cases of DEWS regularly. Only 5 (25%) respondents were sending these regularly to the concerned authorities. As far as availability of transport is concerned, 5 (25%) Health Units were having this facility. Of these 4 (20%) Health Units, drivers were appointed on vehicles and vehicles were in functioning condition. 1 (5%) Ambulance of RHC was off road due to non-availability of funds to repair it.

Regarding monitoring of DEWS, out of 20, 19 (95%) respondents were of the opinion that the concerned authorities were not monitoring the system regularly. 18 (90%) respondents told that ADHO/District Surveillance Coordinator was monitoring the DEWS off and on. Among 20 respondents only 2 (10%) were satisfied about the proper implementation and functioning of DEWS. 15 (75%) respondents stressed the need for proper training to the staff concerned for operation of system.

DISCUSSION

The findings in this study suggest that different categories of health personnel have been involved in the functioning and implementation of DEWS. These health personnel comprise of doctors, medical assistants, dispensers and laboratory technicians and health technicians etc.

This study also depicts that only 10% of the health personnel have been given proper training of Disease Early Warning System in the district. The majority of paramedics, which form major bulk of health care providers, have not been trained in this context. They did not get any formal training regarding this aspect of epidemic assessment, control and prevention. They have only been briefed either by visiting their workplaces or

calling them at DHO Office. It seems ridiculous, unprofessional and in fact irresponsible on the part of management and trainers.

Another observation of this study was that 75% of the respondents, though claimed of having full knowledge about DEWS but in fact their knowledge regarding this system was not up to the mark. It was superficial and haphazard. One of the important tools of the DEWS for diagnosis of diseases is Case Definition Document. It is very surprising to note that 90% of the respondents did not possess this important document, which was essential for the early diagnosis of the various diseases enlisted in DEWS [10]. The recording and reporting material is part and parcel of DEWS. Without it one cannot expect the proper functioning of the DEWS in the district.

Lab facilities play a key role in confirming the diagnosis and it was noticed that 54% of health facilities did not possess any lab facility. The health facilities with lab set-up were deficient in transport media and sample containers. In DEWS there is frequent need for transportation of blood, urine or stool samples to the referral laboratories so that the ultimate diagnosis could be established. In the absence of such facilities the working of this system seems to be ineffective. This issue demands urgent action on the part of supervisors. Timely reporting of diseases is the backbone of DEWS strategy. It has been observed that 75% of the health facilities are not reporting regularly. The study revealed that 95% of the health facilities are lacking the supervisory aspect. This moribund situation is of immense concern for unmotivated supervisors to keep proper monitoring of DEWS in the district.

CONCLUSION

The majority of the concerned staff has not acquired proper training for DEWS. Tools of DEWS are deficient in most of the Health Units. MOs and paramedics are not able to detect the epidemics well in time. During this study one GP and most of the paramedics were astonished to know that there was a

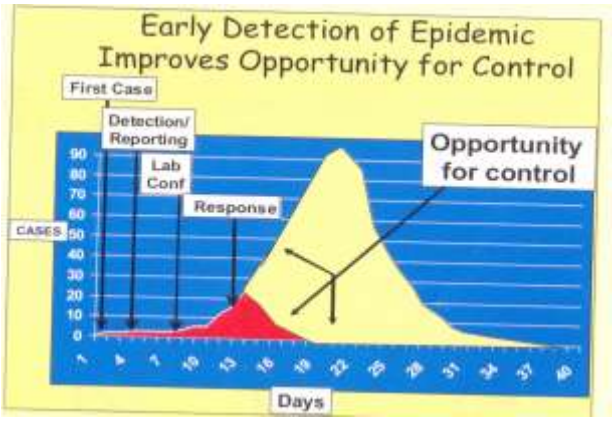

Fig. 1: Early detection of epidemic improves opportunity for control.

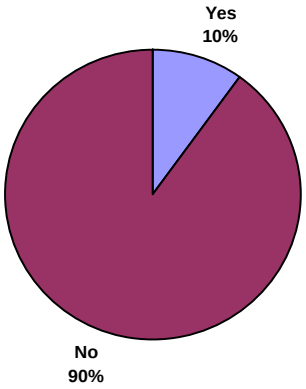

Fig. 2: Respondents Who Received Training for DEWS

Table-1: Health facilities of Bagh district.

DHQ Hospital	1
THQ Hospital	1
Chest Diseases Hospital	1
RHCs	6
BHUs	19
Civil Dispensaries	21
Unani Dispensaries	5
First Aid Posts	47
MCH Centers	32
Private Clinics/Hospitals	10
Total	143

Table-2: Outbreaks recorded by NIH Islamabad.

Type of Outbreak / Epidemic	No. of Outbreaks / Epidemics
Airborne	36
Food and Water Borne	112
Blood Borne	34
Insect Borne	64
Unconfirmed	28
Grand Total:	274

Source: EIC, NIH Islamabad

method by which one can predict about the epidemics beforehand. Concerned authorities are not doing proper and regular monitoring and hence is not getting any feedback whatsoever regarding DEWS from concerned health personnel.

RECOMMENDATIONS

Following recommendations are suggested for improvement in the district Bagh: -

Proper training of DEWS should be given to those personnel from public and private sector responsible for its operation at Health Units for prevention and control of epidemics. General practitioners and private clinicians should especially be included in this training programme.

Tools of DEWS i.e. case definition document, weekly recording and reporting forms, and weekly watch charts should be provided at each health facility and clinic. Training for filling the weekly recording/reporting forms and weekly watch chart should be started as soon as possible.

The concerned health personnel including general practitioners, hakims and homeopaths should also be trained about prediction, prevention and control of an epidemic.

Wherever lab facility exists it should be equipped with all necessary reagents and other material needed for diagnosis of diseases enlisted in DEWS. The provision of sample containers, transport media for handling specimens for detection and confirmation of epidemics should also be ensured at labs of all health units.

Proper training of lab technicians for lab diagnosis of diseases enlisted in DEWS should be ensured.

Some sort of incentives / rewards should be given to those health personnel who implement this DEWS system effectively and efficiently in their areas of responsibility.

Necessary administrative/ disciplinary action should be taken as and when required against the absenteeism, poor performance and negligence from duties.

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