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CROSS SECTIONAL STUDY OF COMMUNICABLE DISEASES SURVEILLANCE SYSTEM

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ABSTRACT

Back ground: Surveillance of infectious disease is recognized as the cornerstone of public health decision-making and practice. Surveillance data are crucial for monitoring the health status of the population, detecting diseases and triggering action to prevent further illness, and to contain public health problems. **Objectives:** The general objective of this study is to assess the core activities supportive functions of the communicable surveillance system in term of structure, performance, epidemic preparedness and response in all health in facility levels in Baghdad. **Method:** A cross-sectional study conducted at 50 health facilities (Primary Health Centers) which randomly selected (stratified sample) in Baghdad and from both directorates were health (Karkh and Russafa) and Communicable Diseases Control Center of Iraq, from the first of November 2014 till the first of February 2015. The data collected by direct interview with the managers of Surveillance Units, observation of records and documents, materials and equipment by using World Health Organization generic questionnaires for assessment of National communicable disease surveillance. **Results:** The results showed that National Surveillance Manual was present in 6% of health centers only. Data reporting was very good achieving a rate of 95% of reporting. Data analysis scored 80% but lack the ability to conduct line graphs for communicable diseases, epidemic preparedness was more than the recommended standard indictors (80%), Also 72% was the achievement of Epidemic response in health centers. Feedback was less than standards just 66% of total achievement had achieved. Supervision on surveillance system was present in 65% of health centers The poorest results in this study was training (30%) and resources (21%) for health facilities level. The next levels both, district and central level had achieved very good rate except in resources domain. **Conclusion:** In conclusion and according to the findings of the study, the

surveillance system in Baghdad is good in some parameters and weak in the others (which are Training, Resources and expertise).

KEYWORDS: Karkh and Russafa.

INTRODUCTION

Communicable Disease Surveillance and reporting is one of the key elements to combat against diseases and their control. Fast and timely recognition of communicable diseases can be helpful in controlling of epidemics, Nowadays; the communicable disease control is announced as one of the most important health issues, at the international level, to prevent the spread of the disease.[1]

Regardless of tremendous advances of medical sciences in the areas of prevention and treatment of communicable diseases, unfortunately, a communicable disease with the potential capacity to cause epidemics is still a public health problem throughout the world. The incidence of drug resistant pathogens and their vectors (Malaria, Gonorrhea, Meningitis, & Bacterial pneumonia), returning some of diseases to areas that for years have been free of disease (Tuberculosis & Malaria) and the appearance of new diseases (Ebola, Avian influenza, AIDS, & SARS), all of are the reasons for involved sectors' attention to them. Vital parts of public health programs in each country are, surveillance of communicable diseases in order to prevent and control, identify the prevalence and burden of diseases, accomplishment of interventions, assess the effectiveness of surveillance programs, management and health resource allocation surveillance.[2] Health systems use the information from surveillance plan, implement and evaluate health programmes and activities.[3] The overall aim of disease surveillance is to collect information for public action[4] Iraq has witnessed tremendous impacts on its health situation due to wars and sanctions, which have affected the infrastructure and led to more deterioration in presentation of health services. Iraq has utilized primary health care system which has been applied since eighties[5] surveillance is the process of systematic collection, analysis of data with prompt dissemination to those who need to know, for relevant action to be taken. A well-functioning disease surveillance system provides information for planning, implementation, monitoring and evaluation of public health intervention programmes. Surveillance for communicable diseases is a part of public health surveillance, which in turn s part of the wider health information system. The objective of the surveillance system and the use of the information determine the data collected and the speed of information flow within the system. Early

warning of epidemics is essential for effective and rapid control, while information on endemic communicable disease is essential for monitoring the disease. Either way, information on priority communicable diseases is critical for control. Many countries have developed surveillance capacities monitor diseases with a high burden, to detect outbreaks of epidemic prone disease and to monitor progress towards national or international control or eradication targets. In this sense, surveillance of communicable diseases is a national function.[6]

METHODS

A cross-sectional study conducted in 50 randomly selected (Primary Health Centers) in Baghdad Governorate and both directorates of health (Karkh and Russafa) and communicable diseases control center (CDCC) of Iraq through collecting and investigate the data by direct interview (face to face) and observation of equipment, materials and records The data collection started from 1st November 2014 till the l February 2015.

Total number of primary health care centers in Baghdad Province had been taken from the official records in both directorate of Health in Baghdad, which were 165 study time. The sample included primary health care centers with surveillance units, the total surveillance and communicable diseases units' involved in this study was165. The sampling technique used in this study was stratified sample. The data collection was made by the use of WHO generic questionnaires for assessment of National communicable disease surveillance and response system at three levels[6] with no modifications to it at all The researcher at each level completed it. 80% performance all CDSS levels as the standard benchmark for each indicator had.

RESULTS

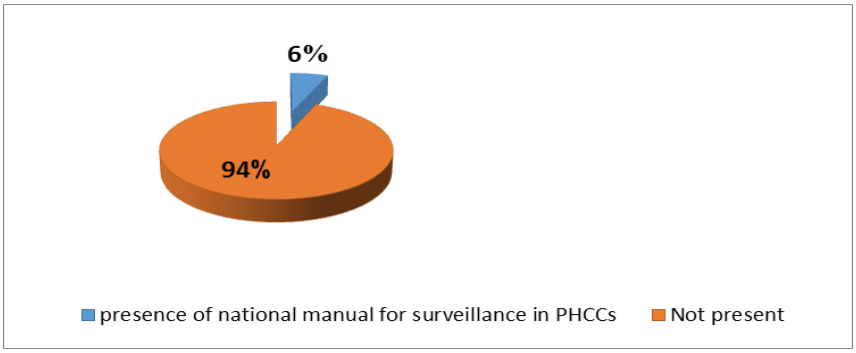


Figure 1: The Presence of National surveillance Manual for work (Guidelines) in Surveillance Units (n 50). The National Manual of Surveillance (NSM) was present in

6% and not presents in 94% of the selected health facilities (Primary Health Care Centers), (Figure 1).

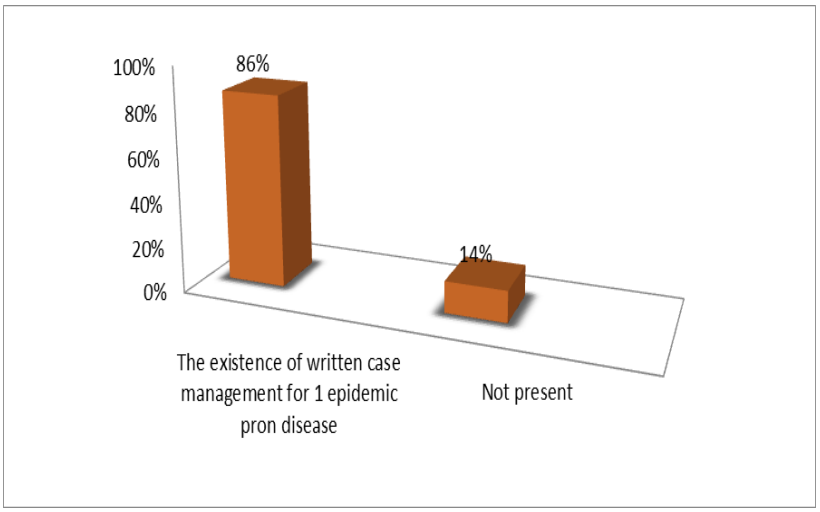
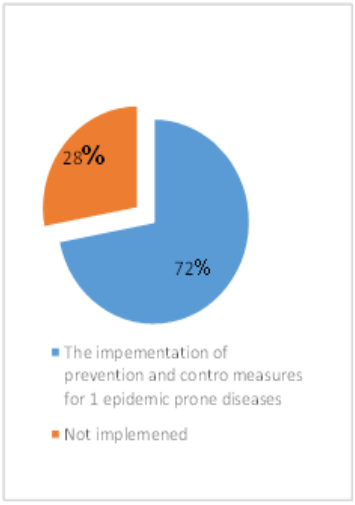


Figure 2: Epidemic preparedness in Surveillance Units (n= 50).Indicators of Epidemic preparedness and response evaluation also shown in (Figure 2). The results showed that 86% of the health facilities had a written case management protocol for at least one epidemic prone disease while it was absent in 14% of health facilities.



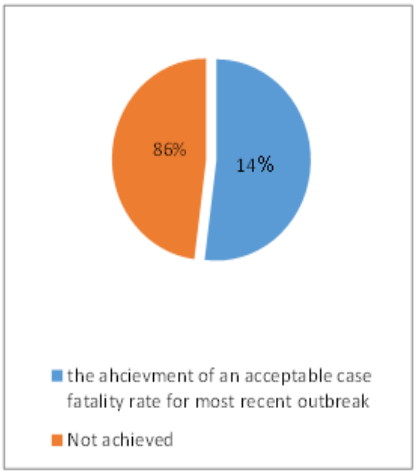


Figure 3: Epidemic Surveillance Units (n 50). In (Figure 3) that illustrate the epidemic response, revealed that 72% of health facilities implement prevention and control measure for one epidemic prone disease while not implemented in 28%. Acceptable case fatality rate for most recent outbreak (10% for Meningococcal, for Cholera) was achieved in 48% and not achieved in 52% of health centers.

Table 1: supervision in surveillance units (n=50).

Supervision	Surveillance units	
	Freq.	%
The presence of supervision in the last 6 months	44	88%
The presence of appropriate review of surveillance in supervision	21	42%

The result of evaluation of supervision is illustrated in Table 1). The supervision of surveillance activities during supervisory visits from the higher levels were 88%. Surveillance data of communicable diseases was reviewed in 42% of health facilities by the supervisors.

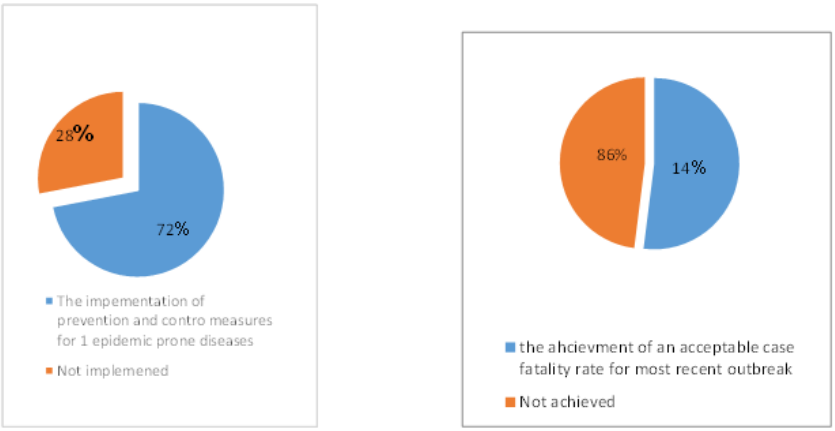


Figure 4: Resources in Surveillance Units (n-50).

The availability of resources at surveyed health facilities was variable. Electricity, posters and generator were present in all of the examined health facilities. Stationery were available in (96%); while (80%) of health facilities had calculators, (6%) had printer, (0%) had computers in surveillance unit and (4%) of these health facilities had their special vehicles. (14%) had telephone service, (40%) computers that have modems (internet line). Presence of megaphone scored (70%), flipcharts or image box (6%), VCR and TV set (98%). Assessment of the availability of other surveillance resources showed that (30%, 20%, 8%, 94% and 92%) of health facilities had screen, projector, spray pump, disinfectants and protection materials respectively. Bicycles, motorcycles, statistical package, fax and radio call were not present in all of the examined health facilities too. These resources were used to support all surveillance systems of infectious diseases (Figure 4).

Table 2: Total achievement of core and supportive functions at the health centers, districts and central level.

Core and supportive function		% of achievement		
		PHCC level (n= 50)	District level (n=2)	Central level (n=1)
1	Data reporting	95%	98%%	100%
2	Data analysis	80%	85%	100%
3	Epidemic preparedness	86%	83%	100%
4	Epidemic response	72%	100%	100%
5	Feedback	66%	100%	100%
6	Supervision	65%	50%	100%
7	Training	30%	96%	100%
8	resources	21%	66%	77%
National surveillance manual		6%	100%	100%

Table 2: Summarizes the average percent of achievement of each core and supportive functions with presence of NSM for the surveillance system evaluation results at health centers level (n 50), district level (N 2) and central level (N 1). This assessment showed that all levels in data reporting scored high rates, 95% in PHCC, 98% in district level and 100% for the central level. The data analysis showed that 80% of data had been analyzed in health centers, 85% in district and in central level 100%. Epidemic preparedness in all levels came almost with same results of data analysis as (86%, 83% and 100%) respectively. PHCC scored in Epidemic 72% response while 100% for both district and central level. In feedback also PHCC scored 66% while district and central level both scored 100%.Supervision for health centers was 65% and less in district which is 50%, as with other results the central level scored 100% too. 30% was the achievement in training for health centers, 96% for district level and central level 100%. Presence of resources was very low in health centers scored 21%, district 66% and for central level was 77%. NSM was present in just 6% of presence in in health centers while scored 100% in both levels the district and the central.

DISCUSSION

In this study there were only 6% of health centers (surveillance units) had National Surveillance Manual (which is the guideline for work) for whole communicable diseases that Iraqi ministry of health concerned with and it is under surveillance. This very low percentage may be because there no complete guideline as a book for surveillance in the directorates of health in Baghdad and CDCC, no follow up in PHCC for new instructions where the new instructions and updates come as an annually plan from the central level vertically, while olds plans just left on shelves and forgotten. Also may be due to there is no permanent staff or

persons in charge, where the study found some surveillance units run by newly graduated doctors and they are in rotation stage or by physicians which they manage more than one program in the same time. These results were lower than the results obtained by Abbas Sudan that just 41.2% of health facilities had surveillance manual.[9] In study by Sahal *et.al* 2011, showed that 13.3% of health facilities have surveillance manual.[10] In Mozambique 2006, a report was WHO assessment of Epidemiological Disease Surveillance system found that 34.8% of the health facilities had National Epidemiological Disease Surveillance Guidelines[11] This study disagrees with Ibrahim *et. al* in Saudi Arabia 2009 where 57.6% of health facilities had surveillance manual[12] The difference between both studies may be due to the increased knowledge level and management manner in their surveillance units.

Also 86% of health facilities had written case management protocol and that was obvious during the study where case management protocol provided by primary health districts through DOH to PHCC. The study disagreed with Abass 2010 in Iraq; low percentage obtained in his study which is 11.8%.[9] Better results from Ibrahim *et.al* in Jeddah 2009 about presence of written case management protocol which was (57.6%).[12]

Regarding epidemic response, 72% of health facilities implemented prevention and control measures for one epidemic prone disease, based on a local data the staff in health centers did many control and prevention procedures for suspected and confirm diagnosed in centers, or get informed from higher level if diagnosis made in hospital or other health facility Acceptable case fatality rate for most recent outbreak was achieved in 48% of PHCC, and this low percent may be not because other PHCC not achieved acceptable case fatality rate but because they don't know the final status of cases after they referred to hospitals where there is no feedback from those hospitals. In comparison with Abbas study results was where Abbas study revealed that just 21.6% of health centers implemented prevention and control measures.[9] In agreement with Ibrahim et al study where scored 60.6%[12], also close results from Nsubuga *et al*. in United Republic was Tanzania 2002.[13]

In this study was found last 6 months for surveillance units in PHCC from higher level was 88%. These supervisory visits made by primary health districts at most, DOH and sometimes from MOH in this process of supervision, there must be documentation during the visit of appropriate review of surveillance practices regarding supervision in this scored 42%. This contrast between the percentage study of presence of supervision (88%) and presence of appropriate review (42% may be due to that the supervisor may don't have information about

surveillance or the supervision was to health center in general 42% may just the supervisors whom came from units in higher level, also this may reveals the lack of one of the primary objective of the developed countries the communicable diseases surveillance In qualified supervision functions are done regularly through competent and with much more resources, and clear assignment of responsibility accountability among authorized surveillance personnel Al-Jwadi. *et.al* in Mosul got close results to this study, where surveillance activities supervised in the last 6 months, 5.5% Surveillance data reviewed during the visit.[15]

The total achievements of evaluated domains had been calculated according to all questions or to specific questions which represent those domains chose it as level for where both DOH collect information and send it to CDCC, complete and final result found there. All domains at this level scored 100% except resources scored 77% and that may be accepted results for level represents whole country. Also on districts level, all domains showed results higher than standard benchmark which is 80% except supervision 50% and Resources For those domains below the standard benchmark and those with slightly higher than benchmark, the proper improvements w necessary to make system close to perfection. On the other hand the achievements health care (health than levels surveillance system assessment came with lower results other just data reporting, data analysis and epidemic preparedness was above the benchmark. Epidemic response, feedback and supervision was close t standard benchmark and need more attention to increase the percentage achievement but at an still under acceptable limit. Results of resources showed very low percentage of achievement, where just 21% of PHCC had enough resources, also training was low too where scored 30%. These deficiencies in core and supportive functions may be because the system in Iraq still newly program and because of the gap between health system in Iraq and the development in health sector in the world that happened during last three decades where Iraq was in war and sanction.

CONCLUSION

In conclusion and according to the findings of the study, the surveillance system in Baghdad is good in some parameters and weak in the others (which are Training, Resources and expertise).

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