



**ASSESSMENT OF STRUCTURAL COMPONENTS OF COMMUNICABLE DISEASES  
SURVEILLANCE SYSTEM IN NORTHERN STATE OF SUDAN, 2012**

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**ABSTRACT**

There is a growing international awareness that deals with communicable diseases threat relies on effective efficient and well Structure of communicable diseases surveillance system. This is a facility based- descriptive cross-sectional study aimed to assess the ongoing structure of communicable disease surveillance system in Northern State during the period of 2010-2012. Data were gathered via sets of questionnaires that cover both interviews and certain observations at sentinel sites and state levels. The data were analyzed using the statistical package for the social sciences (SPSS) software. The results showed that only (71%) of surveillance units at localities had a responsible personnel for surveillance activities, and (34%) of the responsible personnel has a deputy, the skills of data entry and analysis were the weakest issue in the sentinel sites level. Also (19%) of sentinel sites had no list of notifiable diseases. The existence and effectiveness of laws and regulations at state level was 100%. There were only 43% of surveillance units at localities level has a coordination to exchange of information. The study recommended conduction of effective training; special attention should be paid to improvements of supportive supervision and provision of sufficient resources to operate the surveillance system effectively in the state and peripheral levels.

**KEYWORDS:** Structural components of communicable disease surveillance system, Northern State, Sudan, 2012.

**INTRODUCTION**

The term “surveillance”, is derived from the French roots, sur (over) and veiller (to watch) is the “close and continuous observation of one or more persons for the purpose of direction, supervision, or control”.<sup>[1]</sup> Public health surveillance has been referred to as the epidemiological foundation for modern public health.<sup>[2]</sup> Surveillance is the ongoing systematic collection, analysis, and interpretation of outcome specific data for use in planning, implementing and evaluating public health policies and practices.<sup>[3,4,5,6,7]</sup> A communicable disease surveillance system (CDSS) serves two key functions; early warning of potential threats to public health and program monitoring functions which may be

disease specific or multi-disease in nature. The early warning functions of surveillance are fundamental for national, regional and global health security. Recent outbreaks such as the severe acute respiratory syndrome (SARS) and avian influenza, and potential threats from biological and chemical agents, demonstrate the importance of effective national surveillance and response systems.<sup>[3]</sup> The structure of the surveillance and response system is defined by legislation (laws, and regulations, including IHR 2005), the strategy for implementing activities, the implementers and stakeholders, and how they relate to each other and to the various networks and partnerships.<sup>[3]</sup>

State from southeast, the River Nile State from the east. The State has an area of about 348697 square kilometers. The dominant profession of the population is agriculture. The total Population of the state is 57876 persons. Administratively the state is divided into seven localities. Dongola is the capital of the state.

**MATERIALS AND METHODS**

**Study design**

This is a descriptive, cross-sectional facility based study.

**Study area**

Northern State is located northern of Sudan, Arab Republic of Egypt delimits it from the north, Greater Libyan Arab Jamahiriya and North Darfur State from the west, North Kordofan State from the south, Khartoum

**The study population**

Three levels of the study subjects

1. State level (n = 1).

2. Localities of Northern state (n=7).
3. Sentinel sites (n = 95).

From the three mentioned levels the study subjects include the following:

1. Structures or unit (facilities of Surveillance System).
2. CDSS Personal and resources.
3. Documents and records.

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### Sample

Total enumeration of all levels of the surveillance system in the state including sites, personnel and records.

### Study variables

Structural variables included: (organization, available offices, existing plans of action, coordination, network lab facilities)

Human resources included: (doctors, public health officers, lab technicians, medical assistance, nurse and statisticians), skills, training.

Operational resources (financial, materials and supplies) supplies included: register books, forms, case definition, guidelines, posters, transport and communication means.

### Data collection technique

1. Structured interviewed question-naire.
2. Focus group discussion (FGD).
3. Check lists for the structures, facilities and records at all levels of the system.

### Data analysis

The data was analyzed by using the statistical package for the social sciences (SPSS) software.

### Ethical consideration

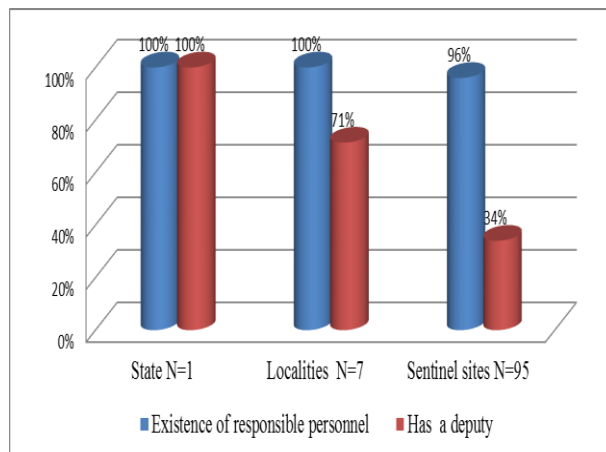
Consent was tacked from all participants at the target health units in study area it is include:

1. Approval from Al-Zaiem Al-Azhari University.
2. An approval from the ministry of health at the state level.

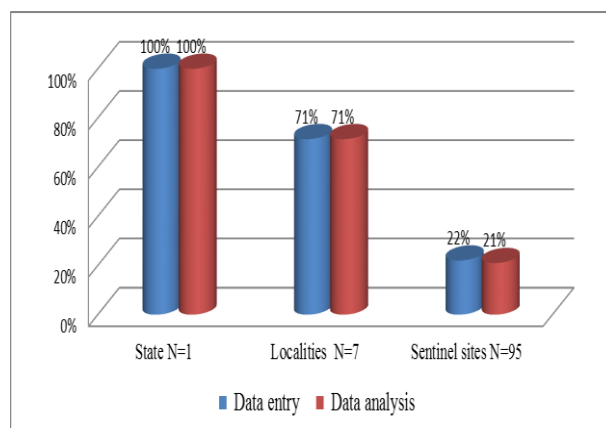
### RESLUTS AND DISCUSSIONS

The study confirmed that only (71%) of surveillance units at localities had a responsible personnel about surveillance activities, and (34%) of a responsible personnel has a deputy (figure 1). And skills of data entry and analysis were the weakest issue in the sentinel sites level (figure 2). Also (19%) of sentinel sites had no list of Notifiable diseases (figure 3).The existence and

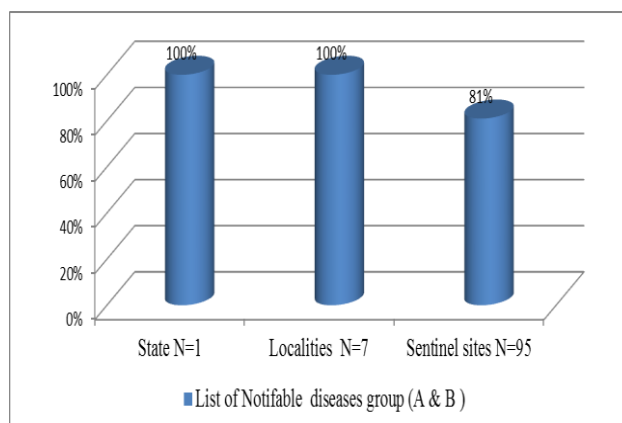
effectiveness of laws and regulation (100%) at state level (figure 4). There are only (43%) of surveillance units at localities level has a coordination to exchange of information (figure 5). Partnerships and cooperation were less at peripheral level (localities and sentinel sites) (figure 6).



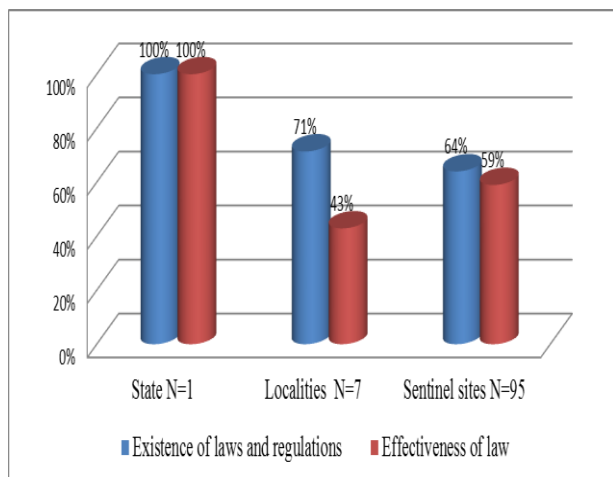
**Figure (1): Shows the distribution of surveillance units by existence of responsible personnel about surveillance activities, Northern State, Sudan, 2012.**



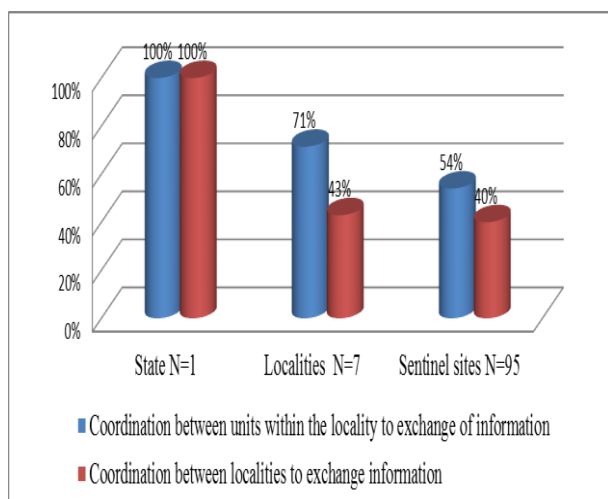
**Figure (2): Shows the distribution of surveillance units by health personnel having computer skills, Northern State, Sudan, 2012 .**



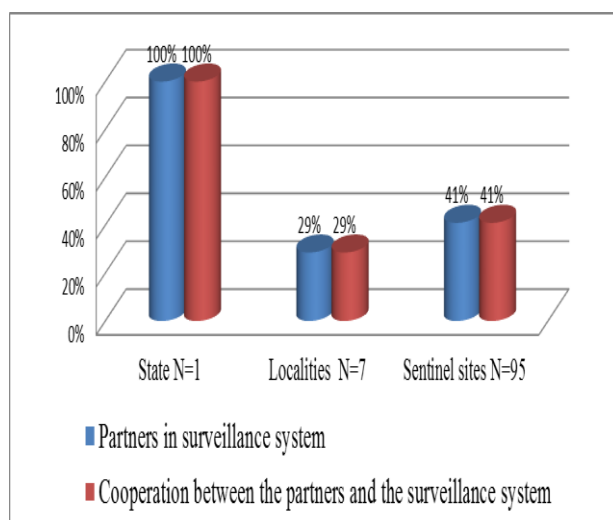
**Figure (3): Shows the distribution of surveillance units by existence of list of Notifiable diseases, Northern State, Sudan, 2012.**



**Figure (4): Shows the distribution of surveillance units by existence of laws and regulations, Northern State, Sudan, 2012.**



**Figure (5): Shows the distribution of surveillance units by existence of coordination to exchange of information, Northern State, Sudan, 2012.**



**Figure (6): Shows the distribution of surveillance units by existence of partnerships and cooperation, Northern State, Sudan, 2012.**

## RECOMMENDATION

The study suggests the following recommendations

### 1. To the Federal Ministry of Health (FMOH)

- Conduct training for state trainers about diseases in surveillance, outbreak management, early preparedness, utilization of standard forms, advance data analysis and management.
- Revise and update the National Guidelines and training material to update included diseases and recent legislations.
- Conduct effective and supportive supervision.

### 2. To the State Ministry of Health

- Avail sufficient resources to augment the surveillance system in the state and particularly at peripheral levels.
- Formulate and train rapid response team at all levels.
- Conduct effective training by the trained team to lower level.
- Provide sufficient transport, equipments and health supplies.
- Strengthen the coordination.

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