

# Web survey on Disease or Syndromic surveillance systems

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**Revision history:**

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1	Introduction .....	4
2	Types .....	4
2.1	RSVP: .....	4
2.2	ESSENCE II: .....	5
2.2.1	Types of data collected;.....	5
2.3	LEADERS: .....	5
2.4	RODS: .....	5
2.5	NEDSS: .....	5
3	Other disease surveillance systems (Public health surveillance systems).....	5
3.1	Types: .....	5
4	Conclusion.....	6
5	References .....	6

## 1 Introduction

Disease/Syndromic surveillance is an epidemiological practice with the aim to monitor the spread of diseases. It helps to predict, observe and reduce the harm that could occur by an outbreak, epidemic or pandemic situation. It is geared towards early detection of signs and symptoms of a disease.

## 2 Types

Some early detection and rapid notification surveillance systems include;

- Electronic Surveillance System for Early Notification of Community-based Epidemics (ESSENCE II)
- Rapid Syndrome Validation Project(RSVP)
- National Electronic Disease Surveillance System(NEDSS)
- Real-time Outbreak and Disease Surveillance(RODS)
- Lightweight Epidemiological Advanced Detection and Emergency Response Systems(LEADERS)

These systems rely on prediagnostic clinical data and others to evaluate suspected outbreaks. Generally, clinical surveillance systems are broadly categorized into 2;

- Those that rely primarily on clinical judgment for the recognition of disease/syndromes found on patient. Some examples of Syndrome categories in this group are; influenza-like illnesses, fever with skin rash, severe diarrhea, adult respiratory distress.
- Those that rely primarily on data generated by clinical care and individual behavior to track outbreaks. Some examples of syndromes are; respiratory, fever, Dermatologic infections, neurologic.

### 2.1 *RSVP:*

This system relies on physician judgment for capturing the severity of illnesses and disease categories. It is used by clinicians in both community and hospital-based settings. The system is aimed at providing communication between clinicians and public health authorities for the purpose of informing each other about unusual diseases or disease trends.

## **2.2 ESSENCE II:**

This system is aimed at improving early identification of intentionally released bioagent, into the community. It also provides a means by which early warnings of other abnormal diseases outbreaks, especially those caused by infectious diseases. It gives alert to public health authorities.

### **2.2.1 Types of data collected;**

- Sensitive healthcare data, which gives the level of disease activity in a population and can detect an outbreak.
- Traditional data (laboratory results)
- Nontraditional clinical data gotten from hospital and outpatient settings.

## **2.3 LEADERS:**

This is used for early detection of significant infectious disease outbreaks. Physicians at hospitals obtain information about patients' symptoms, demographics, etc and then use a web based technology to input the information from where it can be used for detection.

## **2.4 RODS:**

- Used for monitoring patterns suggestive of an infectious disease outbreak
- Used for real-time clinical data analysis.
- Can also be used for environmental surveillance

## **2.5 NEDSS:**

- It is used for accumulating and sharing data. It connects to the public health surveillance systems and thus, helps in the early detection of emerging public health threats.
- NEDSS uses data from physicians, laboratory technicians, to detect the increase of disease conditions. It also makes it possible for health professionals and government agencies to communicate about disease patterns and response to outbreaks.
- NEDSS transfers data electronically to local health department for investigation.

## **3 Other disease surveillance systems (Public health surveillance systems)**

Public health surveillance systems is a systematic way to collect, analyze, interpret and disseminate data about health related events so that it can be used to reduce morbidity and mortality and to improve the health of a particular population. Public health surveillance also gives a real-time warning information about health problems that needs to addressed. These systems rely on diagnostic information to track disease epidemics.

### **3.1 Types:**

A) National Notifiable Disease Surveillance System ( NNDSS)

- This system is used for the surveillance of communicable diseases and notifiable diseases.
- A notifiable disease is one for which regular, frequent, and timely information on individual cases is considered necessary to prevent and control that disease.
- NNDSS uses the National Electronic Telecommunication System for Surveillance (NETSS) for transmitting data or reports to the centers for disease control.
- Data or reports are gotten from healthcare providers and laboratories.

#### B) Sentinel Surveillance systems

- Consist of health facilities and laboratories that report all cases of various trends in certain conditions.

#### C) Electronic Surveillance System for Early Notification of Community- based Epidemics (ESSENCE II).

- used to capture and analyze public health indicators for early detection of outbreaks.

## 4 Conclusion

There are several diseases or syndromic surveillance systems but this work was focused on some of those which get their data from the clinical settings, health physicians or laboratories.

## 5 References

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