Effective Surveillance in Practice – Specific Role of the Microbiology Laboratory in Infection Control

Ranganathan Iyer *

Surveillance is defined as an ongoing systematic collection, analysis and interpretation of health data essential to the planning, implementation and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know and the ongoing dissemination of information to those who need to know. The utility of surveillance in any infection control programme can be brought out with the following:

- It can indicate when there is a change in the pattern of disease, giving an alert to all personnel in a hospital as to an impending outbreak of an infection
- The spread and containment measures can be monitored through a data base created as part of the surveillance process.
- The efficiency of all routine infection prevention measures can be judged .
- The planning process can be supported.
- It does help reduce nosocomial infection rates in a hospital.

The type of surveillance activities will be influenced by the following:

- Organisational demographics
- Community demographics (urban or rural population served)
- Types of procedures and services offered.
- Infection prevention risk assessment
- Annual evaluation of infection prevention plan and goals.

Many hospitals in India have an underdeveloped and underutilised infection surveillance facility. This program has four essential components namely:

1. Surveillance with feedback to clinical and surgical colleagues
2. Control/ monitoring and auditing of practice
3. having adequate staff with ICN's in place to control and carry out surveillance activities.
4./ Having proper personnel involved in the program

Types of surveillance :-

A. Laboratory Based surveillance :

This is usually a straightforward process where by the lab gives out alerts on organisms that can be a cause of serious concerns as they have the potential to cause outbreaks. A lab system though wonderful, must be clinically correlated with all information from the clinical side. Some examples of alert organisms are as follows:

- Positive clinical isolates from sterile body sites and fluids.
- Positive organisms from high risk areas such as intensive care unit and the nursery.
- Positive clinical isolates from sites of interest such as surgical wound sites, intravascular catheter sites, Foley catheter sites and endotracheal secretions from ventilated patients.

B. Post discharge Surveillance :-

This describes the methodologies that are taken to follow up patients discharged from the hospital and in the community. This may be different for different surgical procedures. The surgical procedures with implants and prostheses may require longer periods of post discharge surveillance (upt one year) while those with no implants or prostheses

* Dr. Ranganathan Iyer , Senior Consultant – Microbiology and Infectious Disease,
Global Hospital,
Hyderabad.

require a month's follow up. This is done either via telephonic calls, E mails, letters or physical follow up. However the surveillance is easier said than done and is usually difficult to achieve success.

C. Targeted Surveillance :

This is a method where a particular area of the hospital such as an unit , a ward or an ICU are targeted for surveillance. The beginning point for this may be through a well done point prevalence audit.

D. Sentinel Surveillance : A surveillance carried out by a small group of people which captures enough data for a meaningful collection of data.

The pharmacy may be linked with the surveillance system . This helps stem the prescribing of high on end antibiotics if there is considerable resistance or if that is not consonant with the local antibiotic policy.

Regular surveillance carried out also helps in picking out organisms with an identical antibiotic susceptibility pattern in times of an impending outbreak.