

Evaluation of Communicable diseases surveillance at Provincial General Hospital, Kurunegala - Sri Lanka

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Abstract

Infectious diseases surveillance has been identified as the cornerstone of public health activities and decision making. By evaluating a surveillance system, it is expected to monitor communicable diseases in efficient and effective manner. Aim of this study is to evaluate the current practice of communicable diseases surveillance at Provincial General Hospital, Kurunegala, one of the largest government healthcare institutions in Sri Lanka.

Methods : Secondary data were extracted from hospital notification register, ward notification registers of some selected wards, Electronic Indoor Morbidity and Mortality Return (e-IMMR) and discharge registers of those selected wards. Key informant interviews were carried out with hospital deputy director, medical officer - infection control unit, nursing officer - infection control unit, development officer - information management unit, and ward sisters.

Results : Notification performances of the whole hospital as well as in two selected wards were assessed in relation to five selected communicable diseases. Number of notifications done for Dengue fever, Viral hepatitis, Food poisoning and Leptospirosis were very low compared to number of diagnosed cases of same. However, hospital wise notification of Leishmaniasis is extraordinary high compared to the diagnosed number, since those notifications are done by the Dermatology clinic and currently hospital does not have a mechanism to track diagnosis making at Clinics and Out Patient Department.

During key informant interviews, it was revealed that, people related issues, process related issues and resources related issues were the main underlying causes for low level of notifications done at PGH Kurunegala.

Key words - Communicable Diseases, Evaluation, PGH Kurunegala, Surveillance

Introduction

The term "Surveillance" has been defined as "Systematic ongoing collection, analysis, and interpretation of data and timely dissemination to those who need to know, so that action can be taken"(Mavji, n.d.). Surveillance is a major public health strategy in prevention and control of communicable diseases which guides immediate action for cases of public health importance. It helps to identify the epidemiology of diseases and measure the burden of a disease including changes in related factors, identify the population at risk and identify new or emerging health concerns(WHO, 2006). In addition to that, surveillance helps in monitoring trends in disease burden in relation to time, place, and person.

Communicable diseases surveillance is being carried out in three ways in Sri Lanka as, routine notification of communicable diseases, special surveillance on selected set of communicable diseases and sentinel site surveillance.

Under the routine notification, 26 disease conditions, which have been broadly categorized as group A and group B, have to be notified to the relevant authority. According to the quarantine & prevention of disease ordinance of 1897, notification of those diseases is mandatory. Every medical officer or person professing to treat diseases in the list, shall do the notification. When a patient is suspected to be having a communicable disease, medical officer who treat, should notify it using a standard notification form (H544) and relevant details should be entered in the notification register of the healthcare institution. Then it is sent to the relevant Medical Officer of Health(MOH) office where details will be entered in the notification register of MOH office and distributed to the respective Public Health Inspector(PHI) for investigation. The investigation report (H411 for unconfirmed cases and H411a for confirmed cases) will be sent back to the MOH, once they complete the investigation. Information in these reports is entered in relevant registers and finally weekly return of communicable diseases (H399) is prepared at the MOH office, on weekly basis and sends to the Epidemiology unit and respective regional epidemiologist (RE).

In manual system of notification, all these steps have to be followed before it reach the Epidemiology unit. Hence unexpected level of delays occur due to many reasons, which cannot be corrected easily. Currently there is an “e-surveillance” system, through which notification data send to the RE and Epidemiology unit by each of the MOH office. Feedback of this surveillance published by the Epidemiology unit (national level) through the Weekly Epidemiological Report (WER) and Quarterly Epidemiological Bulletin (QEB).

In addition to the routine surveillance of communicable diseases, special surveillance is also carried out for some selected set of diseases (all diseases covering under the Expanded Programme of Immunization, Dengue Hemorrhagic Fever, Human Rabies, Hepatitis and Leptospirosis). Furthermore, there are 19 sentinel sites to report Influenza Like Illnesses (ILI) and 4 sites to report Severe Acute Respiratory Illnesses (SARI) in the country(Ministry of Health, 2009).

Evaluation of Disease Surveillance at PGH Kurunegala

PGH Kurunegala is the largest hospital in North Western province and provides tertiary level care to a very large draining population. Evaluation of the disease surveillance performances was done at the institutional level as well as at some selected wards level.

Objective of the study

To evaluate the hospital's communicable diseases surveillance performance

Methodology

- Primary survey of secondary data, through hospital notification register, ward notification registers of some selected wards, Electronic Indoor Morbidity and Mortality Return (e-IMMR) and discharge registers of those selected wards
- key informant interviews with hospital deputy director, medical officer - infection control unit, nursing officer - infection control unit, development officer - information management unit, and ward sisters

Only the following five notifiable diseases were considered in this study.

1. Dengue Fever

2. Leptospirosis
3. Leishmaniasis
4. Food poisoning
5. Viral Hepatitis

Results

Number of diagnosed cases of above five diseases during the last 6 months (from January 2020 – June 2020) were obtained from the e-IMMR. Then, the number of total notifications for same diseases during the same time period was obtained from the hospital notification register. Finally the gaps between number of notifications and number of diagnosed cases were calculated. The results are summarized in Table 1.

Table 1: Gaps between Diagnosed and Notified Cases of the Hospital

Disease	Diagnosed No	Notified No	Gap	No notified as a percentage of no diagnosed
Food poisoning	11	02	09	18.18%
Dengue Fever/ DHF	1185	674	511	56.87%
Leptospirosis	178	52	126	29.21%
Leishmaniasis	01	148	147	14800%
Viral Hepatitis	03	00	03	00

According to Table 01, there is a huge gap between number of diagnosed cases and the number of notified cases of aforementioned five diseases. When number of notified cases expressed as percentages of number of diagnosed cases for each of those diseases, results were, 18.18%, 56.87%, 29.21% and 00%, respectively for Food poisoning, Dengue Fever/ DHF, Leptospirosis and Viral Hepatitis. However, number of notified cases of Leishmaniasis was extraordinary high compared to diagnosed number, since almost all the Leishmaniasis cases have been notified by the Dermatology clinic and those cases were not included in to the e- IMMR. It further revealed that, there is no any database at the hospital to catch number of diagnosis done at clinics and outpatient department.

Assessing the level of Disease Surveillance at Wards Level

Two wards were selected (one Medical ward and one Pediatrics ward) to assess the performance of disease surveillance at Wards level. Number of diagnosed cases with aforementioned diseases were calculated using the ward discharge register and number of notifications for each of those conditions were taken from ward notification register of respective wards. Results are summarized in Table 02 and Table 03.

Table 02; The Gaps between the Diagnosed and Notified Cases in Medical Ward (Ward 01)

Disease	Diagnosed No	Notified No	Gap	No notified as a percentage of no diagnosed
Food poisoning	00	00	00	00
Dengue Fever/ DHF	120	48	72	40%
Leptospirosis	52	21	31	40.38%
Leishmaniasis	01	00	01	00
Viral Hepatitis A	01	00	01	00

It is clear that, number of notified cases were very low compared to number diagnosed in ward 01. Even though there were very few diagnosed cases of, Leishmaniasis, viral hepatitis and Food poisoning, nothing has been notified. It further revealed that, only 40% of diagnosed dengue cases and 40.38% of Leptospirosis cases have been notified by the ward 01.

Table 03: Gaps between the Diagnosed and Notified Cases in Paediatrics ward(Ward 18)

Disease	Diagnosed No	Notified No	Gap	No notified as a percentage of no diagnosed
Food poisoning	03	01	02	33.33%
Dengue Fever/ DHF	180	102	78	56.66%
Leptospirosis	00	00	00	00
Leishmaniasis	00	00	00	00
Viral Hepatitis A	00	00	00	00

It can be observed that, even a single case of Leptospirosis, Leishmaniasis and viral hepatitis has not been diagnosed at the ward 18 during first 6 months of this year. However, 180 Dengue/DHF cases and 3 food poisoning cases were diagnosed and only 56.66% and 33.33% of those have been notified respectively.

Discussion

In an ideal setup, number of notifications should be higher than the number of diagnosed cases since notifications are done with a tentative diagnosis, which can be changed with time and investigation results. However, number of notifications are significantly lower than diagnosed cases in PGH Kurunegala. Key informant interviews were carried out with the deputy director of the hospital, MO - Infection control unit, ICNO, Medical Record Officer and two sisters of aforementioned wards to find out underlying causes for poor practice of notification in the hospital. Results are summarized in Figure 01.

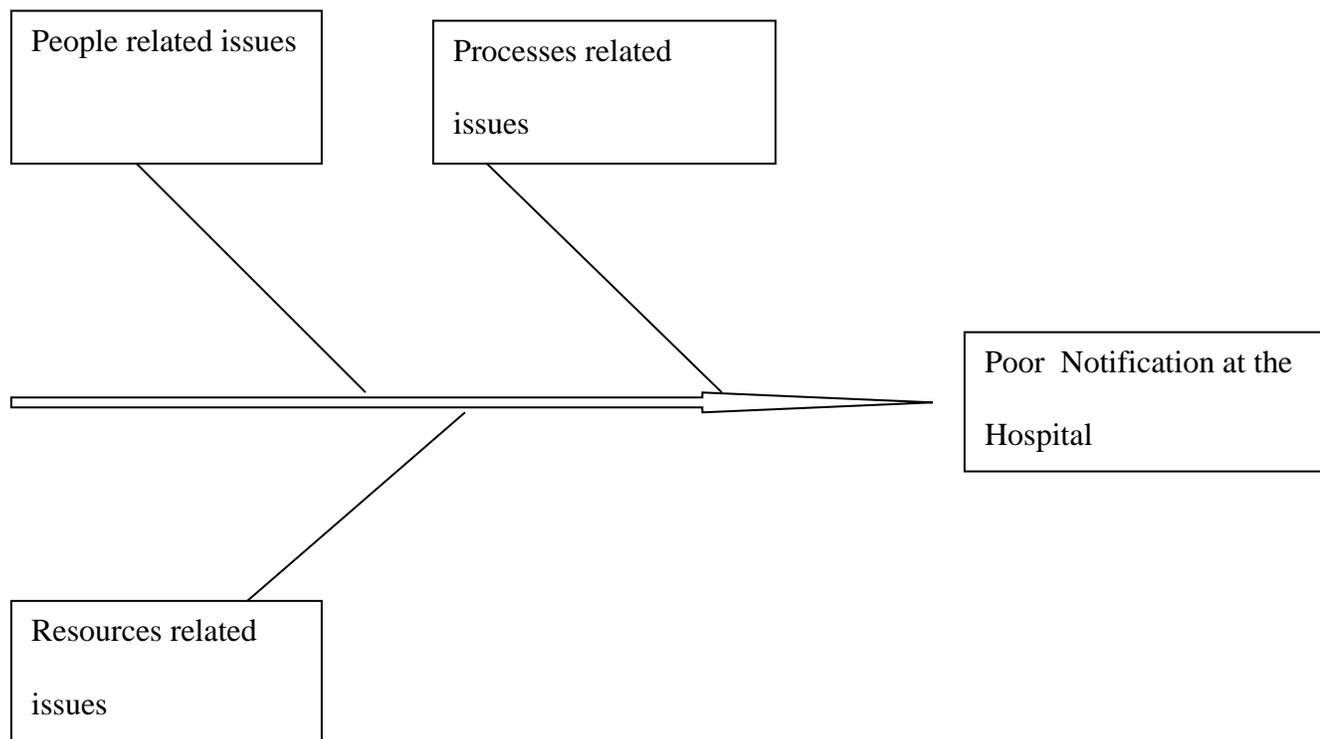


Figure 01 ; Fish bone analysis of the problem

People related issues

Generally notification forms have to be filled by doctors. However most of the doctors in the curative sector do not have a good knowledge about the importance of notification of diseases. They give priority for treating patients while neglecting the very important element of prevention and control of diseases.

Wards coming under four major specialties, cater for the largest proportion of inward patients in the hospital. It is the usual practice that, House Officers(HOO) see patients and make clinical notes at first in those wards. During few interviews held with some HOO it was revealed that their senior doctors or even respective consultants have not asked them to do notifications as a mandatory activity.

Most of the doctors as well as nurses are having the misconception of "notification is an unnecessary paper work". Majority of them are having highly negative attitude towards this important activity. In addition to that most of them did not know that, notification is a legal requirement.

Issues related to existing processes

During the routine operations of hospital (Particularly in wards and the OPD), there is no a proper mechanism to make the notifications happen when it requires. It solely depends on the particular doctors' interest. There is no proper monitoring and evaluation system to assess the performance of notification and to correct it. In addition to that, unavailability of a focal point at the hospital to handle this process, also an identified major issue.

Resources related issues

Unavailability of adequate number of human resources in the hospital is one of the major reasons to avoid them from doing most of the paper work. PGH Kurunegala is one of the busiest hospitals in the country, particularly wards of major four specialities are extremely busy with their routine curative work.

Conclusion and Recommendation

Surveillance is a well known effective public health measure used for prevention and control of diseases. However PGH Kurunegala shows a very poor level of communicable diseases surveillance practices mainly due to, people related issues, process related issues and resources related issues. Followings are the recommendations to improve the existing level of communicable diseases surveillance at PGH Kurunegala.

1. All the doctors should be educated regarding the importance of notification and how to do the notification in correct way. Particularly they should be educated regarding the fact that, it is a legal requirement and failure of doing the notification is a punishable offence.
2. During the orientation programmes for new HOO, they should be strictly advised to do notifications as a mandatory requirement.
3. A mechanism should be developed in the hospital to make it a routine process and not depends only on personnel interests. For example, nursing officers of relevant units should be educated regarding the notification and notifiable diseases. Whenever a patient comes with a suspected notifiable disease, they should be asked to attach a notification form to the BHT during the patient registration itself. After the patient is seen by a doctor, nursing officers can recheck whether the notification form has been filled or not.
4. Head of the institution (HOI), should develop a proper monitoring and evaluation system to assess the performance of notification in each unit. Quarterly reviews should be conducted in order to identify gaps and to take necessary corrective actions.
5. A focal point should be there in the institution to handle notification process. Ideally it can be the infection control unit, headed by the consultant microbiologist. Planning and implementation of related activities, resource allocation, monitoring and evaluation of the process should be done by the focal point.

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