



WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit

Ministry of Healthcare and Nutrition

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Food borne outbreak in Trincomalee (Part i)

Background

On 23rd of March 2009, an outbreak of suspected food poisoning in the Trincomalee town was reported to the Epidemiology Unit with a large number of students being admitted to the hospital. One adult who got admitted had died on admission. Further, it was informed that there was a situation of panic in the town following this death. Different electronic media were already disseminating conflicting information with regard to the purported outbreak. At the height of this incident, the Epidemiology Unit initiated a preliminary investigation. An epidemiologist visited Trincomalee to conduct the outbreak investigation. The objectives of the investigation were to determine if the reported incident was an outbreak, if so to describe the outbreak in time, place and person, to develop a hypothesis regarding the pathogen, source of infection and mode of transmission and to give recommendations to control and prevent the outbreak.

Verification of the diagnosis and Establishing the existence of an outbreak

To verify the diagnosis and establish the existence of an outbreak, background information were obtained from key informants such as the Provincial Director of Health Services, Eastern Province, Regional Director of Health Services, Trincomalee, Medical Officer of Health, Trincomalee, public Health Inspectors, Medical superintendent of the GH Trincomalee, Medical Officers, clinicians and the nursing staff at the Trincomalee hospital, Provincial Food and Drugs Inspector. All bed head tickets of patients admitted for the purported outbreak were scrutinized for collection of data after visiting all the relevant wards in the GH Trincomalee. Data were collected from patients warded at the hospital on the day of investigation.

- On 22.03.2009, two fishermen had purchased pastry products (10 numbers) namely curry buns and egg buns baked at a bake house in the Main Street, Trincomalee.

- These were bought around 5 am and reportedly have consumed at 10.00 am.
- By 6 PM, both had developed abdominal pain, vomiting and diarrhea. Fever was recorded on admission.
- On return to the land, remaining products had been given to two other persons.
- They consumed one and five numbers of the incriminated product respectively.
- On 23.03, by 11 am, both developed symptoms similar to that of the preceding two victims.
- All four consulted GPs in this regard.
- On 24.03 around 8.30 am all three admitted to the hospital as the condition was deteriorating and critical.
- One patient aged 62 years died on admission.
- Incubation period for the initial two fishermen was 6 hours while for the other two, it was 15 hours.
- A dose response relationship to the severity of the disease was found.

Establishing a preliminary case definition

"Acute onset of abdominal pain, vomiting, diarrhea and fever after consuming bakery products in Trincomalee after 22.03.2009".

Identifying additional cases

Scrutinizing BHTs revealed that there were another 144 patients who were ill following consumption of bakery products on the same day. The paediatric ward (ward 1) had 89 admissions while the medical female (ward 8) and male wards (wards 6) had 31 and 24 admissions respectively. Four had been admitted to the intensive care unit and later transferred to wards. Mean age of patients were 12.6 years while mode and median age was 11 years. There were 72 (49%) male and 75 (51%) female admissions. All admissions in this regard had been reported from various places of Trincomalee. However, more specific details about

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place of residence could not be obtained in this regard from available secondary data. None of these patients fitted into the preliminary case definition of the first cluster of Patients. However, as a large number (144) had admitted with acute on set of symptoms following consumption of bakery products , there arose the question as to if this was a separate outbreak. Therefore, a descriptive analysis of 144 patients was made .

Descriptive Epidemiology :

The signs and symptoms reported by patients. They are given in table 1.

Table 1: Description of signs and symptoms reported

| Signs and symptoms | Number | Percentage |
|-----------------------|--------|------------|
| Abdominal pain | 60 | 45.1 |
| Giddiness | 44 | 29.9 |
| Nausea | 36 | 24.5 |
| Vomiting | 24 | 16.3 |
| headache | 17 | 11.6 |
| diarrhea | 09 | 6.1 |
| weakness | 05 | 3.4 |
| Drowsiness | 05 | 3.4 |
| Fever | 03 | 2.2 |
| Gum bleeding | 01 | 0.7 |
| No symptoms and signs | 14 | 9.5 |

by patients:

There were 14(9.5%) admissions without any symptom. The majority of patients had admitted with abdominal pain, giddiness and nausea. A distinctive feature from the first four patients was that none of these patients had developed fever.

Distribution of patients by the time that they got admitted to the hospital is given in the figure 1.

Figure 1 : distribution of admissions of patients by time (24.03.2009)

The majority of patients have admitted during 11-11.30 am of 24/03/2009. The last patient had been admitted at 22.30 - 23.00 hours on the same day. Since then, there have not been

any admissions till the moment of investigation on 25.03.2009. Majority (n=98, 67%) of patients admitted to the hospital during the period of 10.00 hours to 12.59 hours

An attempt was made in the investigation to identify a possible common food items associated with the admitted patients using the data obtained from the Bed Head Ticket. Distribution of food items consumed by patients admitted is shown in table 2.

Table-2 : Distribution of food items consumed by patients admitted

It is apparent that wheat based products have been associated with majority of cases. However, bread and buns were the main incriminated food according to the food histories given by patients on admission. But it was inadequate to point towards one specific or a few common bakeries, eating houses and restaurants as the possible contaminant source since this information were not included in the Bed Head Tickets. Interviews with inward patients suggested that these food items had been obtained from different sources. Some were house made and others were from a wide range of bakeries and hotel.

| Food item | Number | Percentage |
|--------------------|--------|------------|
| bread | 62 | 43.0 |
| buns | 50 | 34.7 |
| Other type of buns | 14 | 9.7 |
| Cakes | 01 | 0.7 |
| Parata | 01 | 0.7 |
| Pittu | 01 | 0.7 |
| Roty | 02 | 1.4 |
| String hoppers | 02 | 1.4 |
| hoppers | 01 | 0.7 |
| kottu | 02 | 1.4 |
| Missing data | 08 | 5.5 |
| Total | 144 | 100.0 |

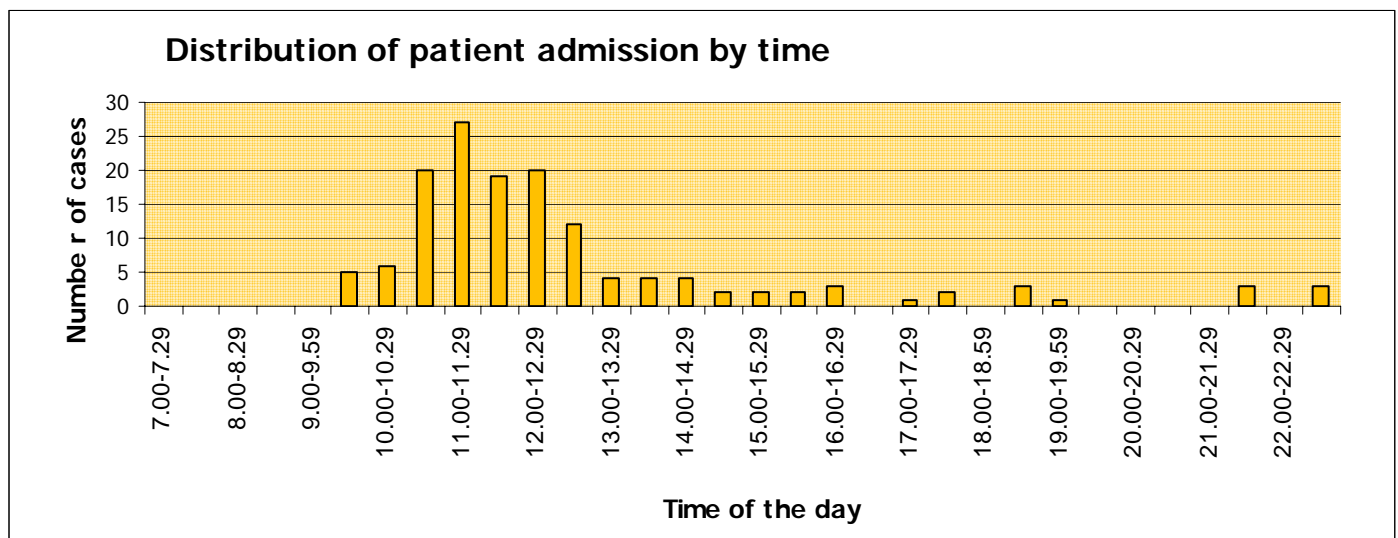


Table 1: Vaccine-preventable Diseases & AFP

21st March - 27th March 2009 (13th Week)

| Disease | No. of Cases by Province | | | | | | | | | Number of cases during current week in 2009 | Number of cases during same week in 2008 | Total number of cases to date in 2009 | Total number of cases to date in 2008 | Difference between the number of cases to date in 2009 & 2008 |
|-------------------------|--------------------------|----|----|----|------------|----|------------|----|------------|---|--|---------------------------------------|---------------------------------------|---|
| | W | C | S | N | E | NW | NC | U | Sab | | | | | |
| Acute Flaccid Paralysis | 02 CB=2 | 00 | 00 | 00 | 00 | 00 | 01 PO=1 | 00 | 01 RP=1 | 04 | 01 | 19 | 18 | 5.6% |
| Diphtheria | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | - |
| Measles | 01 CB=1 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 01 | 01 | 36 | 30 | +20.0% |
| Tetanus | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 11 | 07 | 30 | -76.7% |
| Whooping Cough | 00 | 00 | 00 | 00 | 01 BT=1 | 00 | 00 | 00 | 00 | 01 | 00 | 19 | 08 | +137.5% |
| Tuberculosis | 08 | 18 | 02 | 02 | 04 | 17 | 24 | 18 | 45 | 136 | 158 | 1997 | 2156 | -7.4% |

Table 2: Newly Introduced Notifiable Disease

21st March - 27th March 2009 (13th Week)

| Disease | No. of Cases by Province | | | | | | | | | Number of cases during current week in 2009 | Number of cases during same week in 2008 | Total number of cases to date in 2009 | Total number of cases to date in 2008 | Difference between the number of cases to date in 2009 & 2008 |
|---------------|--------------------------|--------------------|--------------------|------------|------------|--------------------|--------------------|--------------------|------------|---|--|---------------------------------------|---------------------------------------|---|
| | W | C | S | N | E | NW | NC | U | Sab | | | | | |
| Chickenpox | 37 | 17 | 26 | 137 | 11 | 22 | 13 | 5 | 37 | 305 | 166 | 2841 | 1526 | +86.2% |
| Meningitis | 01 CB=1 | 06 KD=5 ML=1 | 06 GL=3 MT=3 | 01 JF=1 | 02 KM=2 | 05 PU=2 KG=3 | 02 AP=1 PO=1 | 01 BD=1 MO=1 | 01 RP=1 | 27 | 32 | 264 | 451 | -41.5% |
| Mumps | 04 | 04 | 01 | 04 | 00 | 01 | 03 | 01 | 01 | 19 | 68 | 464 | 604 | -23.2% |
| Leishmaniasis | 00 | 05 NE=5 | 08 MT=5 HB=3 | 00 | 00 | 00 | 01 AP=1 | 00 | 00 | 14 | Not available* | 340 | Not available* | - |

Key to Table 1 & 2

Provinces: W: Western, C: Central, S: Southern, N: North, E: East, NC: North Central, NW: North Western, U: Uva, Sab: Sabaragamuwa.
 DPDHS Divisions: CB: Colombo, GM: Gampaha, KL: Kalutara, KD: Kandy, ML: Matale, NE: Nuwara Eliya, GL: Galle, HB: Hambantota, MT: Matara, JF: Jaffna, KN: Killinochchi, MN: Mannar, VA: Vavuniya, MU: Mullaitivu, BT: Batticaloa, AM: Ampara, TR: Trincomalee, KM: Kalmunai, KR: Kurunegala, PU: Puttalam, AP: Anuradhapura, PO: Polonnaruwa, BD: Badulla, MO: Moneragala, RP: Ratnapura, KG: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

Leishmaniasis is notifiable only after the General Circular No: 02/102/2008 issued on 23 September 2008.

National Control Program for Tuberculosis and Chest Diseases: Tuberculosis.

Table 3: Laboratory Surveillance of Dengue Fever

21st March - 27th March 2009 (13th Week)

| Samples | Number tested | Number positive | Serotypes * | | | | |
|------------------------------|---------------|-----------------|-------------|----|----|----|----------|
| | | | D1 | D2 | D3 | D4 | Negative |
| Number for current week | 02 | 00 | 00 | 00 | 00 | 00 | 00 |
| Total number to date in 2009 | 26 | 03 | 00 | 00 | 03 | 00 | 00 |

Sources: Genetic Laboratory, Asiri Surgical Hospital

* Not all positives are subjected to serotyping.
 NA= Not Available.

Table 4: Selected notifiable diseases reported by Medical Officers of Health
21st March - 27th March 2009 (13th Week)

| DPDHS Division | Dengue Fever / DHF* | | Dysentery | | Encephalitis | | Enteric Fever | | Food Poisoning | | Leptospirosis | | Typhus Fever | | Viral Hepatitis | | Human Rabies | | Returns Received Timely** |
|------------------|---------------------|-------------|-----------|-------------|--------------|-----------|---------------|------------|----------------|------------|---------------|------------|--------------|------------|-----------------|------------|--------------|-----------|---------------------------|
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | % |
| Colombo | 28 | 538 | 0 | 47 | 1 | 5 | 3 | 64 | 1 | 12 | 24 | 122 | 0 | 2 | 0 | 21 | 1 | 3 | 92 |
| Gampaha | 10 | 284 | 4 | 39 | 0 | 5 | 0 | 19 | 0 | 9 | 5 | 76 | 0 | 3 | 1 | 27 | 0 | 1 | 86 |
| Kalutara | 3 | 155 | 6 | 86 | 0 | 3 | 3 | 23 | 0 | 6 | 3 | 52 | 0 | 0 | 0 | 4 | 0 | 1 | 100 |
| Kandy | 23 | 519 | 13 | 99 | 0 | 1 | 0 | 9 | 2 | 52 | 7 | 65 | 2 | 34 | 0 | 13 | 0 | 0 | 88 |
| Matale | 14 | 177 | 1 | 27 | 0 | 0 | 0 | 14 | 0 | 5 | 12 | 137 | 0 | 2 | 0 | 2 | 0 | 1 | 100 |
| Nuwara | 2 | 20 | 6 | 110 | 0 | 0 | 2 | 57 | 0 | 20 | 0 | 16 | 0 | 17 | 1 | 20 | 0 | 0 | 100 |
| Galle | 2 | 33 | 3 | 55 | 0 | 6 | 0 | 0 | 1 | 5 | 7 | 51 | 1 | 2 | 0 | 6 | 0 | 3 | 95 |
| Hambantota | 2 | 42 | 1 | 26 | 0 | 6 | 0 | 2 | 0 | 5 | 0 | 15 | 1 | 28 | 2 | 7 | 0 | 0 | 91 |
| Matara | 7 | 171 | 4 | 92 | 0 | 2 | 0 | 4 | 0 | 4 | 5 | 55 | 2 | 53 | 0 | 5 | 0 | 0 | 100 |
| Jaffna | 0 | 7 | 2 | 32 | 0 | 3 | 3 | 68 | 0 | 19 | 0 | 0 | 2 | 78 | 1 | 6 | 0 | 1 | 50 |
| Kilinochchi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mannar | 0 | 3 | 1 | 11 | 0 | 0 | 2 | 56 | 4 | 4 | 0 | 0 | 0 | 0 | 6 | 14 | 0 | 0 | 75 |
| Vavuniya | 0 | 4 | 4 | 36 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| Mullaitivu | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Batticaloa | 36 | 194 | 1 | 38 | 0 | 9 | 0 | 5 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 82 |
| Ampara | 0 | 22 | 1 | 10 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 57 |
| Trincomalee | 0 | 56 | 1 | 27 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 3 | 0 | 0 | 60 |
| Kurunegala | 7 | 216 | 0 | 45 | 0 | 3 | 1 | 15 | 0 | 1 | 0 | 33 | 0 | 41 | 2 | 19 | 0 | 3 | 89 |
| Puttalam | 5 | 48 | 4 | 41 | 0 | 5 | 1 | 36 | 0 | 0 | 7 | 36 | 0 | 20 | 0 | 3 | 0 | 1 | 89 |
| Anuradhapu | 15 | 99 | 1 | 25 | 0 | 3 | 0 | 3 | 0 | 2 | 2 | 61 | 0 | 21 | 0 | 4 | 0 | 0 | 74 |
| Polonnaruw | 0 | 20 | 0 | 10 | 0 | 1 | 1 | 10 | 3 | 6 | 2 | 35 | 0 | 0 | 0 | 3 | 0 | 0 | 100 |
| Badulla | 2 | 22 | 2 | 72 | 0 | 2 | 0 | 16 | 0 | 13 | 0 | 32 | 0 | 21 | 4 | 71 | 0 | 0 | 100 |
| Monaragala | 1 | 10 | 0 | 15 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 5 | 1 | 28 | 0 | 13 | 0 | 0 | 73 |
| Ratnapura | 3 | 68 | 11 | 176 | 1 | 12 | 0 | 21 | 0 | 1 | 1 | 28 | 0 | 11 | 0 | 6 | 0 | 1 | 72 |
| Kegalle | 5 | 250 | 2 | 31 | 0 | 3 | 0 | 11 | 0 | 1 | 1 | 31 | 1 | 9 | 3 | 47 | 0 | 1 | 64 |
| Kalmunai | 1 | 70 | 3 | 46 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 62 |
| SRI LANKA | 166 | 3028 | 71 | 1198 | 2 | 72 | 16 | 453 | 11 | 175 | 76 | 863 | 10 | 375 | 20 | 302 | 1 | 17 | 81 |

Source: Weekly Returns of Communicable Diseases (WRCD).

*Dengue Fever / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.

**Timely refers to returns received on or before 27th March, 2009 Total number of reporting units =311. Number of reporting units data provided for the current week: 253

A = Cases reported during the current week. B = Cumulative cases for the year.

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Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to chepid@sltnet.lk.

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