# WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
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## Trachoma

### Introduction

Trachoma is the leading infectious cause of blindness in the world which is a major public health concern in 42 countries. Trachoma is caused by the intracellular bacterium, *Chlamydia trachomatis.* Isolated infection is usually self limiting. Repeated infection leads to blindness. Trachoma is entirely a preventable cause of blindness.

### Burden

Among the 42 endemic countries are countries in Africa, Central and South America, Asia, Australia and Middle East. Out of them, Africa is the most affected and the place where most intense control efforts are in place. Infection is particularly prevalent in dry, dusty regions and settings where hygienic practices are poor, overcrowded and poverty ridden. Just over 200 million people live in these endemic areas making them particularly vulnerable to get infected. In these endemic areas infection is common in childhood and infection usually subsides in adolescence. These children present with varying degrees of scarring.

As the leading preventable cause of blindness Trachoma is responsible for blindness in 1.9 million people. This accounts for 1.4% of the total number of people with blindness globally. In 2015 alone, in Africa, 176,000 underwent surgery for Trachoma and 54 million were treated with antibiotics.

Apart from the burden on health sector, Trachoma poses a significant impact on economy as well. Lost productivity due to blindness and visual impairment is estimated to be between 2.9 billion US$ to 5.3 billion US$.

### Pathogenesis

*Chlamydia trachomatis* is a gram negative obligate intracellular pathogen. Infection with this pathogen causes inflammation of the conjunctiva characterized by lymphatic and monocyte infiltration with plasma cells and macrophages in follicles. Tissue damage is immunologically mediated. Repeated infection leads to sustained inflammation which ultimately ends up in scarring ( trachomatous conjunctival scarring). Repeated infection is common in disease endemic communities.

In the process of scarring, the normal, loose vascular subepithelial stroma gets replaced by thick compact bands of type IV and type V collagen. Due to scarring conjunctival epithelium gets atrophied. It also leads to loss of goblet cells in the conjunctival epithelium.

Scarring leads to contraction and buckling of the tarsal plate of the upper eyelid producing entropian and trichiasis. In entropian the eyelid turns inward and in trichiasis eyelashes get introverted, due to which the eyelid rubs on cornea causing pain, discomfort and corneal damage. If left untreated this leads to formation of irreversible opacities and visual impairment.

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**Transmission**

Incubation period of *Chlamydia trachomatis* infection is 5 to 12 days. It can spread directly or indirectly. The ocular discharges and nasopharyngeal secretions of the infected people contain the bacteria. These secretions can contaminate other individuals directly. On the other hand, secretions can contaminate other sites like clothes, towels etc. and indirectly spread the infection. Apart from that, particular types of flies, especially *Musca sorbens* aid in disease transmission, mostly in Middle East. Infected individuals are contagious as long as active lesions are present in conjunctiva and adnexsal mucosa.

**Clinical features**

There are two phases in the clinical course of Trachoma– active phase and scarring/ cicatricial phase. These two phases can co– exist. Most of the patients in the active phase are relatively asymptomatic. However, they can sometimes show symptoms similar to follicular conjunctivitis which include watery discharge, redness, photophobia and pain. Dry eyes is a feature of scarring phase as scarring destroys mucus and serous glands. Apart from that irritating foreign body sensation in the eyes and blepharospasms ( involuntary tight closure of the eye lids) can be present. Trichiasis, entropian, corneal opacities are other unique features of the scarring phase.

**WHO simplified Trachoma grading system**

**TF- Trachomatous Inflammation – Follicular**

The presence of five or more follicles in the upper tarsal conjunctiva

**TI - Trachomatous Inflammation – Intense**

Pronounced inflammatory thickening of the tarsal conjunctiva that obscures more than half of the normal deep tarsal vessels

**TS - Trachomatous Scarring**

The presence of scarring in the tarsal conjunctiva

**TT - Trachomatous Trichiasis**

At least one eyelash rubs on the eyeball or evidence of recent removal of in turned eyelashes

**CO - Corneal Opacity**

Easily visible corneal opacity over the pupil

**Diagnosis**

History suggesting recent dwelling in an endemic area along with relevant clinical presentation aid in diagnosis. Laboratory investigations can be done for its confirmation. Polymerase Chain Reaction (PCR), Giemsa– stained smears for the detection of intracellular chlamydial elementary bodies in epithelial cells of conjunctival scrapings, immunofluorescence examination after methanol fixation of the smear, detection of chlamydial antigen by enzyme immunoassay or deoxyribonucleic acid by probe, isolation of the agent in special cell culture are some of the investigations that can be done. However, these methods are not readily available and feasible in resource poor settings, especially, in disease endemic areas.

**Risk factors**

Children are more at risk of developing Trachoma. Apart from that, women are affected up to four times as often as men mainly because of their close contact with infected children. Environmental risk factors include poor hygiene, crowded households, exposure to dry wind, dust and fine sand, water shortage and inadequate latrine and sanitary facilities.

**Treatment**

"SAFE" (S– Surgical treatment, A– Antibiotic therapy, F– Facial cleanliness, E– Environmental improvement) is the strategy developed by WHO, indicating the key components of the treatment of Trachoma.

Eyelid surgery is done in patients with trichiasis and entropian. Surgical management reduces the rate of progression of corneal scarring. It also improves visual acuity for some degree by restoring visual surface and reducing ocular secretions and blepharospasms. Oral Azithromycin and Tetracycline are the recommended antibiotic therapy.

Research evidence suggest that facial cleanliness in children reduces both the risk and severity of active Trachoma.

Environmental improvement include improved water supplies, improved household sanitation especially safe disposal of human feces.

All theses practices need to be complimented with improvement of knowledge, attitudes and practices in the community which are necessary to identify and control Trachoma.

**Sources**

World Health Organization official web site

Center for Disease Control and Prevention official website

Control of Communicable diseases Manual, 20th edition

**Compiled by Dr. S.A.I.K. Sudasinghe of the Epidemiology Unit**

Table 1: Selected notifiable diseases reported by Medical Officers of Health 20th – 26th Aug 2016 (35th Week)

| RDHS Division | Dengue Fever | | Dysentery | | Encephalitis | | Enteric Fever | | Food Poisoning | | Leptospirosis | | Typhus Fever | | Viral Hepatitis | | Human Rabies | | Chickenpox | | Meningitis | | Leishmani-asis | | WRCD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | T* | C** |
| Colombo | 236 | 12433 | 4 | 123 | 0 | 9 | 2 | 46 | 3 | 33 | 2 | 183 | 0 | 7 | 3 | 32 | 0 | 0 | 6 | 334 | 1 | 41 | 0 | 0 | 75 | 88 |
| Gampaha | 46 | 4792 | 2 | 104 | 0 | 11 | 1 | 21 | 0 | 26 | 1 | 238 | 0 | 12 | 0 | 31 | 0 | 1 | 4 | 283 | 1 | 34 | 0 | 7 | 33 | 73 |
| Kalutara | 15 | 2640 | 0 | 76 | 0 | 8 | 0 | 27 | 3 | 29 | 6 | 342 | 0 | 7 | 0 | 21 | 0 | 0 | 3 | 198 | 5 | 64 | 0 | 0 | 64 | 100 |
| Kandy | 85 | 3071 | 2 | 126 | 0 | 15 | 1 | 16 | 0 | 33 | 1 | 95 | 2 | 72 | 1 | 43 | 0 | 0 | 20 | 158 | 0 | 32 | 0 | 8 | 87 | 100 |
| Matale | 22 | 719 | 0 | 46 | 0 | 1 | 0 | 11 | 0 | 4 | 1 | 71 | 1 | 19 | 0 | 14 | 0 | 1 | 0 | 27 | 0 | 48 | 0 | 17 | 77 | 100 |
| NuwaraEliya | 8 | 334 | 3 | 74 | 0 | 2 | 0 | 48 | 7 | 36 | 3 | 46 | 0 | 58 | 0 | 31 | 0 | 0 | 2 | 102 | 1 | 33 | 0 | 0 | 77 | 100 |
| Galle | 15 | 1531 | 1 | 113 | 0 | 8 | 0 | 6 | 0 | 8 | 0 | 205 | 3 | 83 | 0 | 7 | 0 | 0 | 1 | 229 | 1 | 33 | 0 | 3 | 50 | 85 |
| Hambantota | 10 | 604 | 1 | 45 | 0 | 1 | 0 | 3 | 0 | 54 | 0 | 87 | 0 | 50 | 3 | 58 | 0 | 0 | 1 | 174 | 0 | 14 | 13 | 247 | 83 | 92 |
| Matara | 29 | 908 | 6 | 97 | 0 | 13 | 0 | 6 | 3 | 38 | 2 | 140 | 1 | 41 | 0 | 27 | 0 | 0 | 5 | 138 | 0 | 19 | 4 | 156 | 100 | 100 |
| Jaffna | 21 | 1680 | 6 | 200 | 0 | 4 | 4 | 70 | 3 | 54 | 0 | 12 | 0 | 577 | 0 | 8 | 0 | 0 | 1 | 138 | 1 | 46 | 0 | 1 | 92 | 92 |
| Kilinochchi | 0 | 66 | 1 | 32 | 0 | 0 | 0 | 34 | 3 | 9 | 0 | 13 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 75 | 100 |
| Mannar | 1 | 107 | 0 | 21 | 0 | 4 | 0 | 20 | 0 | 9 | 0 | 9 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 | 60 | 100 |
| Vavuniya | 2 | 197 | 0 | 11 | 0 | 3 | 1 | 77 | 0 | 31 | 0 | 12 | 0 | 10 | 0 | 6 | 0 | 0 | 0 | 23 | 0 | 8 | 0 | 6 | 75 | 100 |
| Mullaitivu | 0 | 148 | 0 | 23 | 0 | 2 | 0 | 17 | 1 | 40 | 0 | 23 | 0 | 6 | 0 | 2 | 1 | 1 | 2 | 19 | 0 | 7 | 0 | 5 | 80 | 100 |
| Batticaloa | 7 | 420 | 5 | 229 | 3 | 3 | 3 | 40 | 0 | 91 | 0 | 38 | 0 | 5 | 0 | 10 | 0 | 0 | 1 | 79 | 0 | 11 | 0 | 1 | 71 | 86 |
| Ampara | 0 | 193 | 0 | 38 | 0 | 2 | 0 | 0 | 0 | 21 | 0 | 25 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 115 | 0 | 4 | 0 | 5 | 14 | 71 |
| Trincomalee | 3 | 338 | 0 | 49 | 0 | 2 | 0 | 11 | 0 | 24 | 0 | 28 | 0 | 23 | 0 | 32 | 0 | 1 | 0 | 126 | 0 | 11 | 0 | 5 | 67 | 83 |
| Kurunegala | 32 | 1964 | 6 | 247 | 0 | 11 | 0 | 1 | 0 | 13 | 2 | 124 | 1 | 33 | 0 | 19 | 0 | 2 | 7 | 244 | 2 | 46 | 3 | 66 | 76 | 97 |
| Puttalam | 14 | 870 | 0 | 65 | 0 | 4 | 0 | 6 | 0 | 0 | 1 | 36 | 0 | 60 | 0 | 2 | 0 | 1 | 2 | 67 | 4 | 42 | 0 | 3 | 69 | 79 |
| Anuradhapura | 8 | 533 | 2 | 63 | 0 | 3 | 0 | 5 | 0 | 26 | 1 | 239 | 1 | 25 | 0 | 15 | 0 | 0 | 3 | 183 | 2 | 34 | 4 | 174 | 42 | 89 |
| Polonnaruwa | 6 | 360 | 0 | 27 | 0 | 4 | 0 | 10 | 0 | 13 | 2 | 85 | 1 | 2 | 1 | 3 | 0 | 0 | 2 | 89 | 0 | 14 | 1 | 99 | 57 | 86 |
| Badulla | 14 | 599 | 2 | 97 | 0 | 13 | 0 | 8 | 0 | 24 | 1 | 108 | 1 | 81 | 1 | 100 | 0 | 0 | 10 | 179 | 6 | 154 | 0 | 3 | 71 | 82 |
| Monaragala | 8 | 307 | 1 | 47 | 0 | 1 | 0 | 3 | 0 | 10 | 0 | 154 | 0 | 99 | 1 | 114 | 0 | 2 | 0 | 52 | 0 | 18 | 0 | 33 | 82 | 91 |
| Ratnapura | 33 | 2281 | 1 | 279 | 1 | 29 | 0 | 24 | 0 | 23 | 5 | 417 | 1 | 30 | 4 | 119 | 0 | 0 | 4 | 164 | 0 | 112 | 0 | 1 | 50 | 89 |
| Kegalle | 17 | 1106 | 0 | 68 | 0 | 18 | 1 | 28 | 0 | 47 | 0 | 148 | 0 | 23 | 0 | 20 | 0 | 0 | 6 | 245 | 1 | 41 | 0 | 2 | 73 | 100 |
| Kalmune | 2 | 407 | 3 | 68 | 0 | 3 | 0 | 5 | 0 | 43 | 0 | 15 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 71 | 0 | 18 | 0 | 0 | 54 | 85 |
| SRILANKA | 634 | 38608 | 46 | 2368 | 4 | 174 | 13 | 543 | 23 | 739 | 28 | 2893 | 12 | 1385 | 14 | 726 | 1 | 13 | 80 | 3454 | 25 | 895 | 25 | 842 | 68 | 91 |

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 26th August, 2016 Total number of reporting units 339 Number of reporting units data provided for the current week: 313 C**-Completeness

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

## Table 2: Vaccine-Preventable Diseases & AFP

20th – 26th Aug 2016 (35th Week)

| Disease | No. of Cases by Province | | | | | | | | | Number of cases during current week in 2016 | Number of cases during same week in 2015 | Total number of cases to date in 2016 | Total number of cases to date in 2015 | Difference between the number of cases to date in 2016 & 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | C | S | N | E | NW | NC | U | Sab | | | | | |
| AFP* | 00 | 00 | 00 | 00 | 00 | 01 | 00 | 00 | 00 | 01 | 02 | 50 | 51 | -2.1% |
| Diphtheria | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0% |
| Mumps | 00 | 01 | 01 | 00 | 00 | 00 | 01 | 01 | 00 | 04 | 05 | 279 | 260 | +7.3% |
| Measles | 02 | 00 | 00 | 01 | 00 | 00 | 00 | 01 | 00 | 04 | 67 | 316 | 2009 | -84.2% |
| Rubella | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 07 | 08 | -12.5% |
| CRS** | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0% |
| Tetanus | 01 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 01 | 00 | 08 | 14 | -43.1% |
| Neonatal Tetanus | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 0% |
| Japanese Encephalitis | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 13 | 07 | +85.7% |
| Whooping Cough | 01 | 00 | 00 | 01 | 00 | 00 | 00 | 00 | 01 | 03 | 00 | 49 | 59 | -17.1% |
| Tuberculosis | 92 | 08 | 18 | 24 | 15 | 04 | 16 | 08 | 04 | 189 | 213 | 6452 | 6763 | -4.5% |

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.

RDHS 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, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis ), Japanese Encephalitis

CRS** =Congenital Rubella Syndrome

AFP and all clinically confirmed Vaccine Preventable Diseases except Tuberculosis and Mumps should be investigated by the MOH

**Dengue Prevention and Control Health Messages**

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them

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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. **Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

**ON STATE SERVICE**

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