

Subject: Anthropology

Production of Courseware
-Content for Post Graduate Courses

Paper No. : 06 Human Growth Development and Nutrition
Module : 27 Epidemiology of common communicable diseases



Development Team

Principal Investigator Prof. Anup Kumar Kapoor
Department of Anthropology, University of Delhi

Paper Coordinator Dr. Meenal Dhall
Department of Anthropology, University of Delhi

Content Writer Dr. Rajesh K Gautam
Department of Anthropology, Dr.HSG University, Sagar

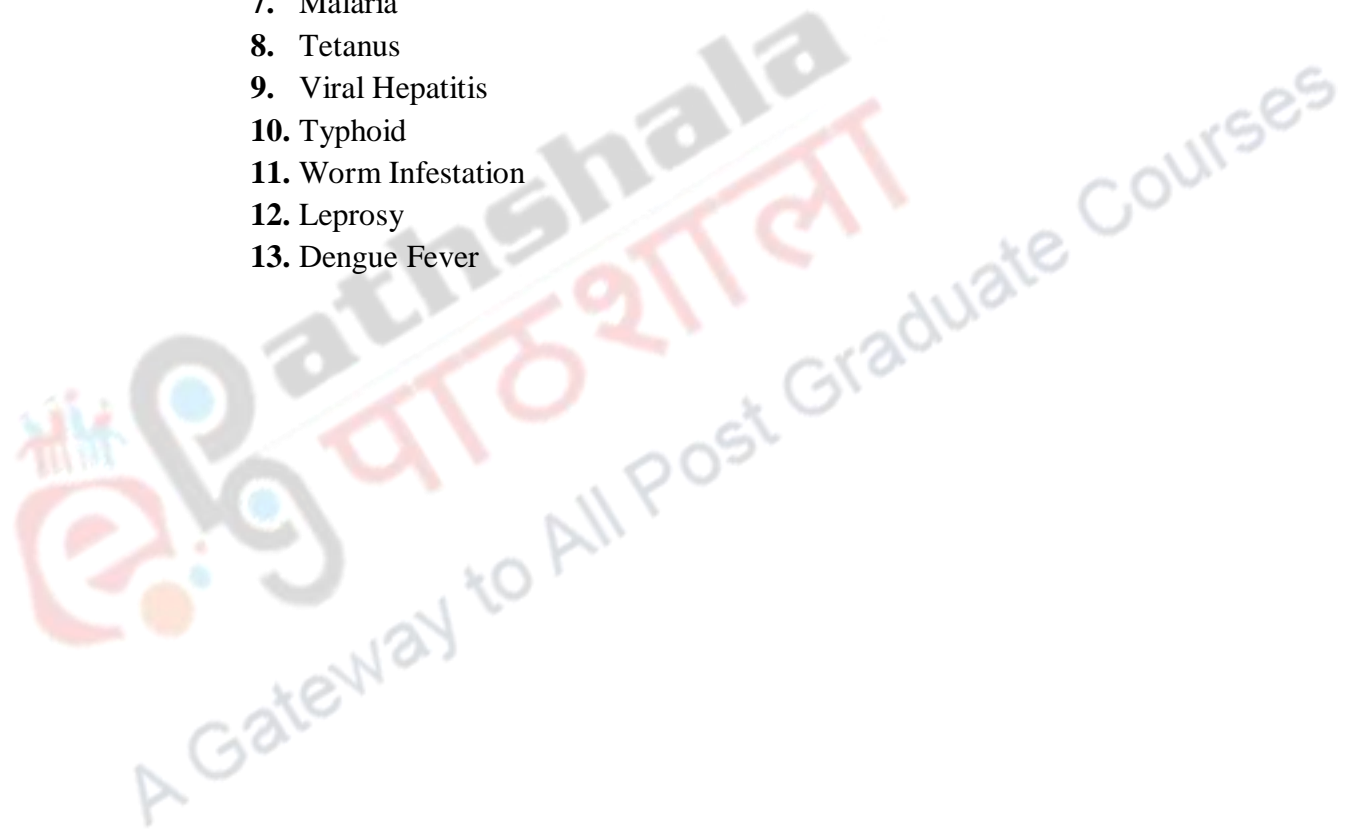
Content Reviewer Prof. Satwanti Kapoor
Department of Anthropology, University of Delhi

Description Of Module	
Subject Name	Anthropology
Paper Name	06 Human Growth Development and Nutrition
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 **Pathshala**
पाठशाला
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1. Learning outcomes: At the end of the module the reader will know

- **Epidemiology**
- **Communicable diseases**
 1. Acute Respiratory Infections (ARI)
 2. Diarrhea Diseases
 3. Tuberculosis
 4. AIDS Catastrophe
 5. Tuberculosis and HIV
 6. Measles
 7. Malaria
 8. Tetanus
 9. Viral Hepatitis
 10. Typhoid
 11. Worm Infestation
 12. Leprosy
 13. Dengue Fever



Introduction

The word **epidemiology was derived** from the Greek words ‘**epi**’, meaning “on or upon,” ‘**demos**’, meaning “people,” and **logos**, meaning “the study of.” Many definitions have been proposed, but the following definition captures the underlying principles and the public health spirit of epidemiology: “Epidemiology is the **study of the distribution and determinants of health related states or events in specified populations**, and the **application** of this study to the control of health problems.”

Epidemiology is the science that studies the patterns, causes and effects of health and disease conditions in defined populations. It is the cornerstone of public health, and informs policy decisions and evidence-based practice by identifying risk factors for disease and targets for preventive healthcare. Epidemiology has helped develop methodology used in clinical research, public health studies, and, to a lesser extent, basic research in the biological sciences.

Epidemiologists rely on other scientific disciplines like biology to better understand disease processes, statistics to make efficient use of the data and draw appropriate conclusions, social sciences to understand proximate and distal causes better, and engineering for exposure assessment. Major areas of epidemiological study include disease etiology, transmission, outbreak investigation, disease surveillance and screening biomonitors, and comparisons of treatment effect such as in clinical trials.

Communicable diseases

Communicable diseases are also known as infectious diseases comprise clinically evident illness resulting from the infection, presence and growth of pathogenic biological agents in an individual host organism. Such kind of diseases are more common in the third world countries, hence also known as diseases of third world or old world.

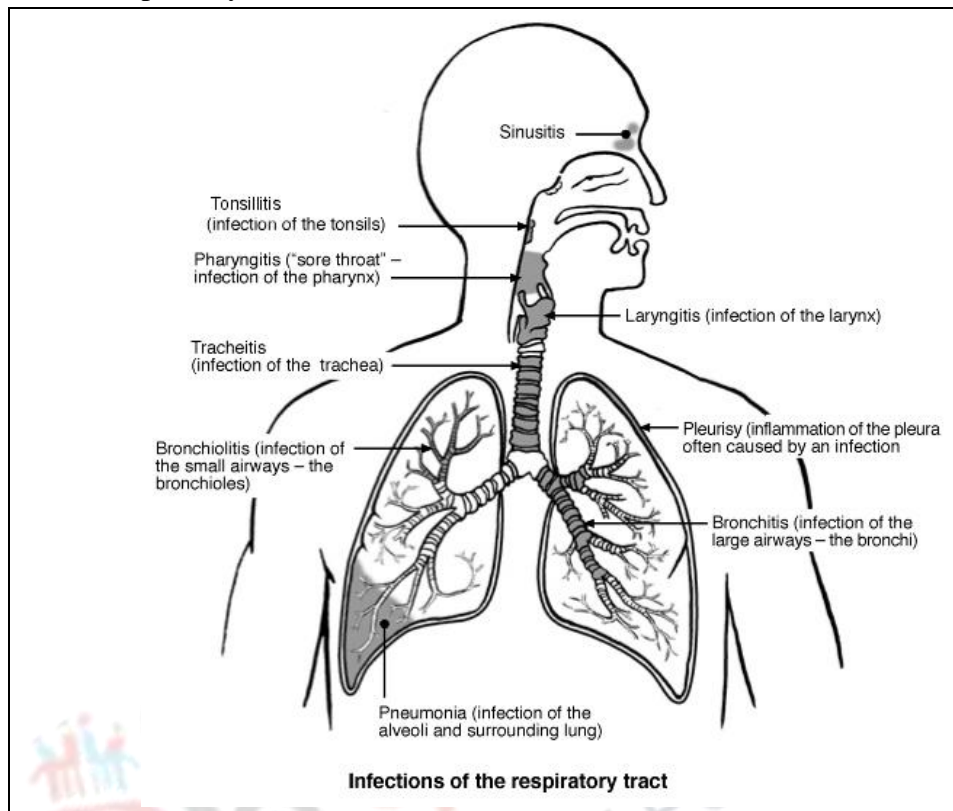
Infections are caused by agents such as bacteria, viruses, microorganisms such as nematodes roundworms and pinworms; arthropods such as ticks, mites, fleas, and lice; fungi such as ringworm, and other macro-parasites such as tapeworms.

Countries like India are facing the double burden of the diseases. The diseases of old world are still in epidemic form in some parts of the country and diseases of New World are also at the same extent. Following paragraphs give an account about the common communicable disease prevalent around the globe.

Acute Respiratory Infections (ARI)

Respiratory infections are of two types: Lower respiratory tract infection and upper respiratory tract infection. Lower respiratory tract infection, while often used as a synonym for pneumonia, can also be applied to other types of infection including lung abscess and acute bronchitis. Symptoms include

shortness of breath, weakness, high fever, coughing and fatigue. Influenza affects both the upper and lower respiratory tracts.



Every year an estimated 4.1 million deaths were caused in young children by ARI. It is estimated that Bangladesh, India, Indonesia and Nepal together account for 40 % of the global ARI mortality. About 90 % of the ARI deaths are due to pneumonia, which is bacterial in origin. On an average, children below 5 years of age suffer about 5 episodes of ARI per year, thus accounting for about 238 million attacks (Park, 2002). According to Beaglehole et al. (2004), in the year 2002, it was a leading cause of deaths among all infectious diseases, and accounted for 3.9 million deaths worldwide and 6.9% of all deaths that year. WHO estimates for mortality were 3.5 million worldwide and burden of disease in terms of DALYs lost were more than 85 million due to ARI. In India, 0.98 million deaths and more than 25 million DALYs lost were due to ARI in the same year.

Diarrheal Diseases

Diarrhea diseases are ancient diseases. During the 19th century, several pandemics of cholera originated from India and spread to western countries. According to a report of World health Organization (WHO) in the years 2004 approximately 2.5 billion cases of diarrhea were occurred worldwide, which resulted into 1.5 million deaths among children under the age of five. Greater than half of these were in

Africa and South Asia (WHO, 2009). This figure is less than the death reported by Mandell et al. (2004) for gastroenteritis in 1980 which was 4.5 million. Still, diarrhea remains the second leading cause of infant mortality (16%) after pneumonia (17%) in this age group (WHO, 2009). The majority of such cases occur in the developing world, with over half of the recorded cases of childhood diarrhea occurring in Africa and Asia with 696 million and 1.2 billion cases respectively, compared to only 480 million in the rest of the world (WHO, 2009).

Infectious diarrhea resulted about 0.7 million deaths of children under five years of age in 2011 and lost of 250 million school days. In the Americas, diarrheal disease accounts for a total of 10% of deaths among children aged 1–59 months while in South East Asia, it accounts for 31.3% of deaths (Walker et al. 2013). It is estimated that around 21% of child mortalities in developing countries are due to diarrheal disease (Kosek 2003).

Tuberculosis

Tuberculosis or TB is one of major communicable disease around the globe. It is an infectious bacterial disease caused by *Mycobacterium tuberculosis*, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. In healthy people, infection of *Mycobacterium tuberculosis* often causes no symptoms, since the person's immune system prevent it. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. Tuberculosis is treatable with a six-month course of antibiotics.

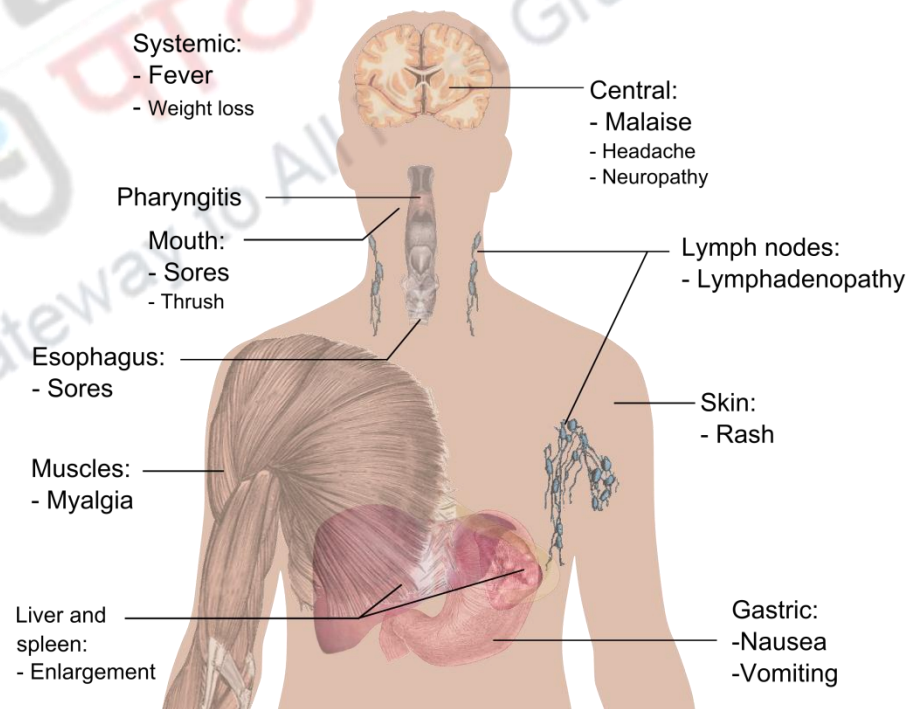
One-third of the world's population is thought to have been infected with *M. tuberculosis*, with new infections occurring in about 1% of the population each year. In 2013, an estimated 9 million people fell ill with TB and 1.5 million died from the disease. Over 95% of TB deaths occur in low- and middle-income countries, and it is among the top 5 causes of death for women aged 15 to 44. In the same year an estimated 480 000 people developed multidrug resistant TB (MDR-TB). The estimated number of people falling ill with TB each year is declining, although very slowly, which means that the world is on track to achieve the Millennium Development Goal to reverse the spread of TB by 2015. The TB death rate dropped 45% between 1990 and 2013. An estimated 37 million lives were saved through TB diagnosis and treatment between 2000 and 2013 (WHO, 2015).

India accounts for nearly 1/3rd of the Global TB burden. Every year there are approximately 2.2 million new cases in the country. TB kills more people than HIV, Malaria and other tropical diseases (Government of India, 2003). Tuberculosis is closely linked to both overcrowding and malnutrition, making it one of the principal diseases of poverty.

AIDS Catastrophe

Acquired Immune Deficiency Syndrome is a combination of infectious diseases caused by a general break down of the immune system in the person infected with HIV (Human Immunodeficiency Virus). Now a day, HIV/AIDS is a global pandemic. During initial infection of HIV, a person may experience a brief period of influenza-like illness. This is typically followed by a prolonged period without symptoms. As the infection progresses, it interferes more and more with the immune system, making the person much more susceptible to common infections like tuberculosis, as well as opportunistic infections and tumors that do not usually affect people who have working immune systems. The late symptoms of the infection are referred to as **AIDS**. HIV is transmitted primarily via unprotected sexual intercourse (including anal and oral sex), contaminated blood transfusions, hypodermic needles, and from mother to child during pregnancy, delivery, or breastfeeding. Some bodily fluids, such as saliva and tears, do not transmit HIV. Prevention of HIV infection, primarily through safe sex and needle-exchange programs, is a key strategy to control the spread of the disease. There is no cure or vaccine; however, antiretroviral treatment can slow the course of the disease and may lead to a near-normal life expectancy.

Main symptoms of **Acute HIV infection**



Main symptoms of acute HIV infection

Average chance of HIV infection as per exposure to an infected source

Exposure route	Chance of infection	Source
Blood transfusion	90%	Murray et al. 2012
Childbirth (to child)	25%	Smith et al. 2005
Needle-sharing injection drug use	0.67%	Murray et al. 2012
Percutaneous needle stick	0.30%	Coovadia 2004
Receptive anal intercourse *	0.04–3.0%	Kripke 2007
Insertive anal intercourse *	0.03%	Dosekun and Fox 2010
Receptive penile-vaginal intercourse *	0.05–0.30%	Kripke 2007
Insertive penile-vaginal intercourse *	0.01–0.38%	Kripke 2007
Receptive oral intercourse *§	0–0.04%	Kripke 2007
Insertive oral intercourse *§	0–0.005%	Boily et al. 2009
* assuming no condom use § source refers to oral intercourse performed on a man		

New HIV infections among adults and children were estimated at 2.3 million in 2012, a 33% reduction since 2001. New HIV infections among children have been reduced to 260 000 in 2012, a reduction of 52% since 2001. AIDS-related deaths have also dropped by 30% since the peak in 2005 as access to antiretroviral treatment expands.

By the end of 2012, some 9.7 million people in low- and middle-income countries were accessing antiretroviral therapy, an increase of nearly 20% in just one year; whereas 35.3 million people globally were living with HIV, 2.3 million become newly infected and 1.6 million people died from AIDS (UNAIDS, 2015). South & South East Asia is the second most affected by the problem; in 2010 this region contained an estimated 4 million cases or 12% of all people living with HIV resulting in approximately 250,000 deaths. Approximately 2.4 million of these cases were in India (Wikipedia, March 29, 2015).

Tuberculosis and HIV

HIV itself is horrible at present, and the number of people infected with both HIV and tuberculosis is increasing worldwide. This is another challenge for human civilization and medical science. The partnership of tuberculosis with HIV has made situation more critical. The HIV virus damages the

body's natural resistance- the immune system- and accelerates the speed at which tuberculosis progresses from a harmless infection to life-threatening condition.

Measles

Measles, also known as morbilli, rubeola, or red measles, is a highly infectious disease of childhood, caused by a RNA Paramyxovirus. It is an airborne disease which spreads easily through the coughs and sneezes of those infected. It may also be spread through contact with saliva or nasal secretions. Nine out of ten people, who share living space with an infected person, may get infection. Initial signs and symptoms typically include fever, often greater than 40 °C (104.0 °F), cough, runny nose, and red eyes. After, two or three days the symptoms as small white spots may easily visible from inside the mouth, known as Koplik's spots. A red, flat rash which usually starts on the face and then spreads to the rest of the body typically begins three to five days after the start of symptoms. Complications occur in about 30% which may include diarrhea, blindness, inflammation of the brain, and pneumonia among others. As per WHO estimate, in the year 2011, nearly 158000 deaths were caused by measles. This was less than the deaths (630,000) occurred in 1990. In the year 2013, measles remains the leading cause of vaccine-preventable deaths in the world (Kabra and Lodhara, 2013). As per WHO fact sheet, in 2013, there were 145700 measles deaths globally – about 400 deaths every day or 16 deaths every hour.

In developed countries, death occurs in 1 to 2 cases out of every 1,000 (0.1% - 0.2%) (CDC, 2014). In populations with high levels of malnutrition and a lack of adequate healthcare, mortality can be as high as 10%. In cases with complications, the rate may rise to 20–30% (WHO, 2014).

Five out of six WHO regions have set goals to eliminate measles, and at the 63rd World Health Assembly in May 2010, delegates agreed a global target of a 95% reduction in measles mortality by 2015 from the level seen in 2000, as well as to move towards eventual eradication. However, no specific global target date for eradication has yet been agreed to as of May 2010.

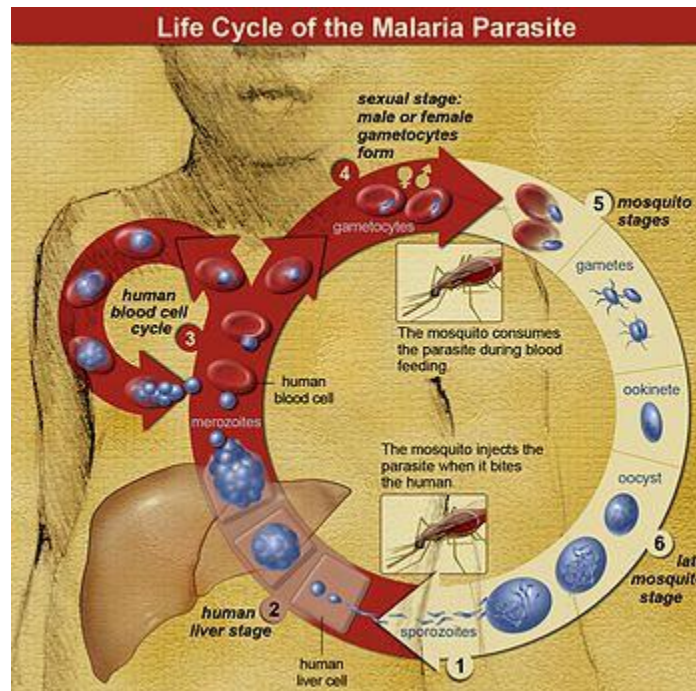
Reported cases

WHO-Region	1980	1990	2000	2005	2014
African Region	1,240,993	481,204	520,102	316,224	12,125
Region of the Americas	257,790	218,579	1,755	66	3,100
Eastern Mediterranean Region	341,624	59,058	38,592	15,069	2,214

European Region	851,849	234,827	37,421	37,332	2,430
South-East Asia Region	199,535	224,925	61,975	83,627	1,540
Western Pacific Region	1,319,640	155,490	176,493	128,016	34,310
Worldwide	4,211,431	1,374,083	836,338	580,287	55,719
Source: Wikipedia (accessed on 30 March 2015)					

Malaria

Malaria is an entirely preventable and treatable mosquito-borne communicable disease of humans and other animals caused by parasitic protozoans belonging to the genus *Plasmodium*. The disease is transmitted by the biting of mosquitos, and the symptoms usually begin ten to fifteen days after being bitten. The typical symptoms of malaria include fever, fatigue, vomiting and headaches. The disease is transmitted most commonly by an infected female *Anopheles* mosquito. The mosquito bite introduces the parasites from the mosquito's saliva into a person's blood. The parasites then travel to the liver of host, where they mature and reproduce. Five species of *Plasmodium* can infect and spread by humans. Most deaths are caused by *P. falciparum* because *P. vivax*, *P. ovale*, and *P. malariae* generally cause a milder form of malaria. The species *P. knowlesi* rarely causes disease in humans. Chloroquine and primaquine are drug used to treat the malaria, but the parasite is adapted with drugs and a new challenge is emerged as drug resistant Malaria.



The life cycle of malaria parasites: A mosquito causes an infection by a bite. First, sporozoites enter the bloodstream, and migrate to the liver. They infect liver cells, where they multiply into merozoites, rupture the liver cells, and return to the bloodstream. Then, the merozoites infect red blood cells, where they develop into ring forms, trophozoites and schizonts that in turn produce further merozoites. Sexual forms are also produced, which, if taken up by a mosquito, will infect the insect and continue the life cycle.

Malaria is presently endemic in a broad band around the equator, in areas of the Americas, many parts of Asia, and much of Africa; in Sub-Saharan Africa, 85–90% of malaria fatalities occur (Layne, 2006). According to an estimate for 2009, countries with the highest death rate per 100,000 of population were Ivory Coast (86.15), Angola (56.93) and Burkina Faso (50.66) (Provost, 2011). As per WHO fact sheet, in the year 2014, malaria was reported from 97 countries and territories. An estimated 3.3 billion people were at risk of malaria, of whom, 1.2 billion are at high risk. In high-risk areas, more than one malaria case occurs per 1000 population. Between 2000 and 2013, an expansion of malaria interventions helped to reduce malaria incidence by 30% globally, and by 34% in Africa. During the same period, malaria mortality rates decreased by an estimated 47% worldwide and by 54% in Africa. In the under-five age group, mortality rates have declined by 53% globally, and by 58% in Africa (WHO 2014).

Tetanus

Tetanus is now comparatively rare disease caused by bacterium *Clostridium tetani*. The bacteria generally enter through a break in the skin such as a cut or puncture wound by a contaminated object. The bacteria are commonly found in soil, dust and manure. **It is also** known as **lockjaw**, characterized by muscle spasms. In the most common type the spasms begin in the jaw and then progress to the rest of the body. These spasms usually last a few minutes each time and occur frequently for three to four weeks. Other symptoms may include: fever, headache, trouble swallowing, high blood pressure, and a fast heart rate. About 10% of those infected die. Tetanus occurs in all parts of the world but is most frequent in hot and wet climates where the soil contains a lot of organic matter. The estimated global number of deaths due to Tetanus decreased from 356000 in 1990 to 59000 in 2013. In India, tetanus is an important endemic infection. Behaviours such as poor hand washing and delivery practices, traditional birth customs, ignorance and unawareness of immunization are important factors affecting the disease incidence. Prior to national immunization programme, an estimated 0.35 million children died annually due to neonatal tetanus. An estimated 70 thousand cases still continue to occur, largely in UP, MP, Rajasthan, Orissa, Bihar and Assam.

Viral Hepatitis

Five known hepatitis viruses are: A, B, C, D, and E. Hepatitis A is endemic in most of the developing countries, with frequent outbursts of minor or major outbreaks. Mostly three types of organisms are responsible for the epidemic. Acute Viral Hepatitis A, transmitted enteric like diarrheal diseases form 30-70% of jaundice cases in children.

Hepatitis B, the serum Hepatitis is an infectious disease caused by the hepatitis B virus (HBV) which affects the liver. It can cause both acute and chronic infections. Many people have no symptoms during the initial infection. Some develop a rapid onset of sickness with vomiting, yellow skin, feeling tired, dark urine and abdominal pain. The virus is transmitted by exposure to infectious blood or body fluids. Infection around the time of birth or from contact with other people during childhood is the most frequent method by which hepatitis B is acquired in areas where the disease is common. In areas where the disease is rare intravenous drug use and sexual intercourse are the most frequent routes of infection. Other risk factors include: working in healthcare, blood transfusions, dialysis, living with an infected person, travel in countries where the infection rate is high, and living in an institution (WHO 2014). Tattooing and acupuncture. The hepatitis B viruses cannot be spread by holding hands, sharing eating utensils, kissing, hugging, coughing, sneezing, or breastfeeding.

About a third of the world population has been infected at one point in their lives, including 240 million to 350 million who have chronic infections. The disease is now only common in East

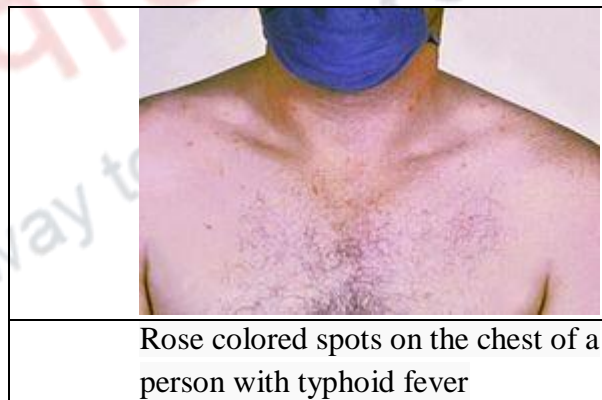
Asia and sub-Saharan Africa where between 5 and 10% of adults have chronic disease. In Europe and North America the prevalence is less than 1% (WHO 2014).

In high-prevalence areas such as China and South East Asia, transmission during childbirth is most common, although in other areas of high endemicity such as Africa, transmission during childhood is a significant factor (Alter 2003). As of 2010, China has 120 million infected people, followed by India and Indonesia with 40 million and 12 million, respectively. According to World Health Organization (WHO), an estimated 6 Lakh people die every year related to the infection.

Typhoid

‘Typhoid’ or ‘typhoid fever’ is a symptomatic bacterial infection due to *Salmonella Typhi*. The name typhoid is derived from “typhus” due to the similarity in the symptoms, which is any of several similar diseases caused by *Rickettsia* bacteria. The name was derived from the Greek *typhos* meaning smoky or hazy, describing the state of mind of those affected with typhus.

The symptoms of typhoid may vary from mild to severe and usually begin after six to thirty days of exposure. Often there is a gradual onset of a high fever over several days. Weakness, abdominal pain, constipation, and headaches commonly occur. Some people develop a skin rash with rose colored spots. Without treatment symptoms may last weeks or months. Other people may carry the bacteria without being affected; however, are still able to spread the disease to others. Typhoid fever is a type of enteric fever along with paratyphoid fever.



Typhoid is spread by eating or drinking food or water contaminated with the feces of an infected person. Risk factors include poverty as a result of poor sanitation and poor hygiene. Those who travel to the developing world are also at risk. Humans are the only animal infected. A typhoid vaccine can prevent about 50% to 70% of cases. The vaccine may be effective for up to seven years. It is recommended for those at high risk or people travelling to areas where the disease is common. Efforts to prevent the disease include providing clean drinking water, better sanitation, and better hand washing practices (WHO 2008).

In 2010, there were 27 million cases were reported. The disease is most common in India and children are mostly affected (Wain et al. 2015). It occurs most often in children and young adults of 5 to 19 years of age (WHO 2007). In 2013, typhoid fever had caused 161,000 deaths globally (GBD 2015). Historically, in the pre-antibiotic era, the case fatality rate of typhoid fever was 10–20%. Today, with prompt treatment, it is less than 1% (Heymann, 2008).

Worm Infestation

It is a universal problem. Almost all segments of population are having worm infestation. There are four types of worm: threadworm (pinworm), roundworm, tapeworm and hookworm, which can infect humans and cause health problems among the host.

Threadworm (*Enterobius vermicularis*) – is spread in a most unpleasant fashion: from bottom to mouth. The worms hatch in the small intestine, and then travel downwards to the colon. They grow to between 8 and 13mm long, have a lifespan of about six weeks, and are long, slender and white in appearance. The worms come out of the anus during the night and lay sticky eggs in the anal skin, causing itching. The child scratches her bottom; the eggs get caught under her fingernails, and inevitably end up in her intestines via her mouth. And so the cycle of worm production continues.

Between 10 and 50 percent of children carry threadworms, and due to their somewhat cavalier personal hygiene practices (nail biting, thumb sucking, general disinterest in soap), are prone to infecting each other and unwitting family members. Sandpits, shared toys and toilets also facilitate transmission between children.

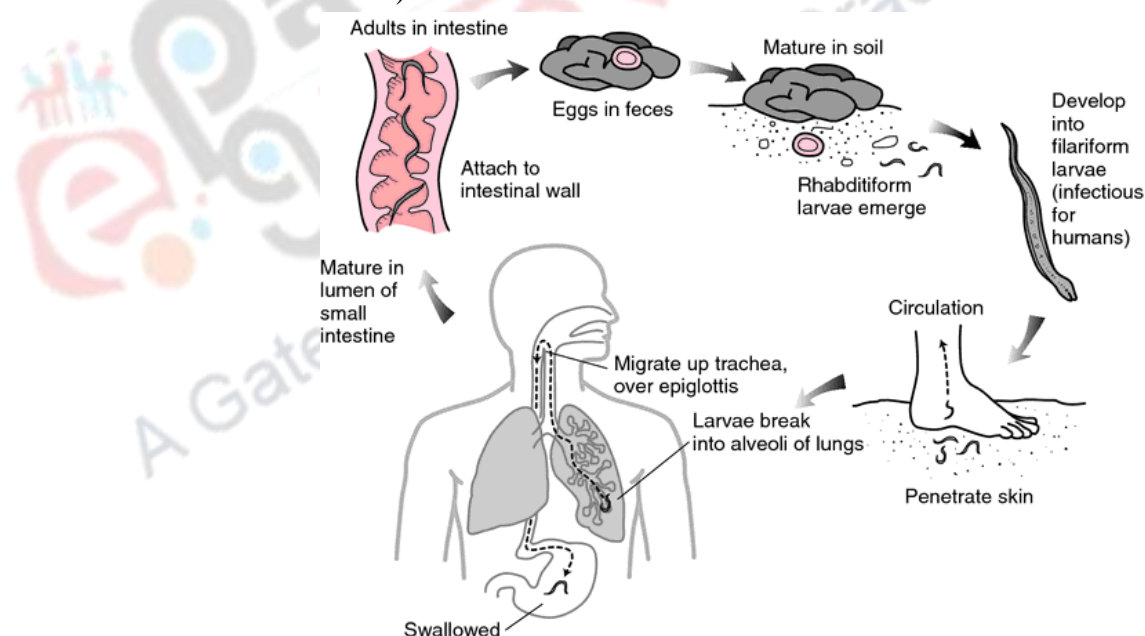
Roundworm (*Ascaris lumbricoides*): **Ascariasis** is a disease caused by the parasitic roundworm *Ascaris lumbricoides*. Humans can become infected with roundworms when they come into contact with food, water or soil that is contaminated with human fecal matter. The eggs, which survive in the environment for long periods, enter the human body via unwashed foods and hands. Once ingested, the eggs hatch into larvae, which then travel through the intestinal walls and to the lungs via the blood or lymphatic systems. They then make their way back to the intestines, mature over two months, and mate. The roundworm carrier can suffer gastroenteritis, protein depletion, malnutrition, and, in the worst cases, gut obstruction. The worms (which can grow to between 15 and 33mm long) may become visible in bowel movements, the nose or mouth. About 0.8 to 1.2 billion people globally have ascariasis with the most heavily affected populations being in sub-Saharan Africa, Latin America, and Asia (Dold and Holland 2011; Keiser and Utzinger 2010). This makes ascariasis the most common form of soil-transmitted helminthiasis. As of 2010 it caused about 2,700 deaths (Dold and Holland 2011).

Tapeworm is the hydatid tapeworm (*Echinococcus granulosus*) most common in humans. It can be pork tapeworm (*T. solium*), the beef tapeworm (*T. saginata*), the fish tapeworm (*Diphyllobothrium spp.*), and the dwarf tapeworm (*Hymenolepis spp.*). Taeniasis is predominantly

found in Asia, Africa, Latin America, particularly on farms in which pigs are exposed to human excrement. It occurs everywhere where beef and pork are eaten, even in countries such as the United States.

Hookworms commonly infect humans. Three species of hookworm namely *Ancylostoma duodenale*, *Necator americanus* and *Strongyloides stercoralis*. *A. duodenale* predominates in the Middle East, North Africa, India. Hookworm affects over half a billion people globally (Fenwick 2012). It is a leading cause of maternal and child morbidity in the developing countries of the tropics and subtropics.

It is estimated that between 576-740 million individuals are infected with hookworm. Of these infected individuals, about 80 million are severely affected. The major etiology of hookworm infection is *N. americanus* which is found the Americas, sub-Saharan Africa, and Asia. *A. duodenale* is found in more scattered focal environments, namely Europe and the Mediterranean. Most infected individuals are concentrated in sub-Saharan Africa and East Asia/the Pacific Islands with each region having estimates of 198 million and 149 million infected individuals, respectively. Other affected regions include: South Asia (50 million), Latin America and the Caribbean (50 million), South Asia (59 million), Middle East/North Africa (10 million). A majority of these infected individuals live in poverty-stricken areas with poor sanitation. Hookworm infection is most concentrated among the world's poorest (Bethony et al. 2006 and Hotez et al. 2005).



Life cycle of Hookworm

Leprosy

The transmission process of leprosy pathogen to a healthy body is still not fully known. It is not hereditary, and least communicable of all infectious diseases. It is also known as **Hansen's disease (HD)**, is a chronic infection caused by the bacteria *Mycobacterium leprae* and *Mycobacterium lepromatosis*. Initially, infections are without symptoms and typically remain this way for 5 to as long as 20 years. Symptoms that develop include granulomas of the nerves, respiratory tract, skin, and eyes (WHO 2014). This may result in a lack of ability to feel pain and thus loss of parts of extremities due to repeated injuries. Weakness and poor eyesight may also be present. It is caused by a bacterium, *Mycobacterium leprae*. It can occur in any social and economic class. Twenty percent of newly detected cases are children. A third of total World's leprosy patients are Indian. There were more than 0.4 million Leprosy patients in India as on 31st March 2002 (Government of India, 2003).

Globally in 2012, the number of chronic cases of leprosy was 189,000 and the number of new cases was 230,000. The number of chronic cases has decreased from some 5.2 million in the 1980s. Most new cases occur in 16 countries, with India accounting for more than half. In the past 20 years, 16 million people worldwide have been cured of leprosy (WHO 2014).



A 24-year-old man infected with leprosy (1886).



Hands deformed by leprosy (1990)

Dengue Fever

Dengue fever is a mosquito-borne tropical disease caused by the dengue virus. Symptoms include fever, headache, muscle and joint pains, and a characteristic skin rash that is similar to measles. In a small proportion of cases the disease develops into the life-threatening **dengue hemorrhagic fever**, resulting in bleeding, low levels of blood platelets and blood plasma leakage, or into **dengue shock syndrome**, where dangerously low blood pressure occurs.

Dengue is transmitted by several species of mosquito within the genus *Aedes*. The virus has five different types (Normile 2013). Infection with one type usually gives lifelong immunity to that type.

Most people with dengue recover without any ongoing problems. The fatality rate is 1–5%, and less than 1% with adequate treatment WHO (2015). However those who develop significantly low blood pressure may have a fatality rate of up to 26%. Dengue is common in more than 110 countries (Ranjit and Kissoon 2011). It infects 50 to 528 million people worldwide a year, leading to half a million hospitalizations, and approximately 25,000 deaths (Varatharaj 2010).

The incidence of dengue has grown dramatically around the world in recent decades. Rates of dengue had increased 30 fold between 1960 and 2010. This increase is believed to be due to a combination of urbanization, population growth, increased international travel, and global warming (WHO 2015). The geographical distribution is around the equator. The actual numbers of dengue cases are underreported and many cases are misclassified. One recent estimate indicates 390 million dengue infections per year, of which 96 million manifest clinically. Another study, of the prevalence of dengue, estimates that 3900 million people, in 128 countries, are at risk of infection with dengue viruses.

In India, around 5000 cases of dengue fever were being reported per year, during rainy season, especially in urban areas (Bhasin and Bhasin, 2002). In recent years, there has been an increase in haemorrhagic fever and dengue shock syndrome associated with this outbreak. Upto November 2001, there were 2929 cases and 47 deaths in India (Government of India, 2002).

Epilogue

Here is description about common communicable diseases, inspite of above; there are many others which are less common, for example: influenza, swine flu, SARS, meningitis, filarial, small pox etc. Between November 2002 and July 2003, an outbreak of SARS in southern China caused an eventual 8,096 cases and 774 deaths. Within weeks, SARS spread from Hong Kong to 37 countries in early 2003. It then was eradicated by January. Since then no cases were reported. Recently, Swine flu and Ebola were created panic. In August 2010, the World Health Organization declared the swine flu pandemic. Ebola is a disease of humans and other primates caused by Ebola viruses. Between 1976 and 2013, the World Health Organization reports a total of 24 outbreaks involving 1,716 cases. The largest outbreak is the ongoing epidemic in West Africa centered in Guinea, Sierra Leone and Liberia. Still diseases like Malaria, Dengue, Diarrhoea, Tuberculosis, Typhoid, Tetanus, Measles, Hepatitis, Worm infestation, Leprosy are causing millions of death tolls around the globe; although these are curable and preventable; whereas the incurable diseases like AIDS is global pandemic. Poverty, unawareness, lack of sanitation and hygiene are causes behind these communicable diseases and their deadly outbreak. The third world countries are most affected by these problems. The highly populated region of the World like India, China and African countries have highest prevalence of such common communicable problem. Beside government of these countries, the institutions like World Health Organization are continuously monitoring these problems. The progress of medical science had already established that such diseases can be eradicated. As now humanity is free from deadliest diseases like small pox.

Summary

Communicable diseases are still a big challenge for us. Many diseases caused by bacteria, virus, fungi, anthropoids, nematodes and other macro organism are communicable. Their prevalence in different region and population are different. But many of such infectious diseases are most common in developing world or third world countries. Some of the infectious and deadly diseases such as small pox were completely eradicated. Others are on the process, but still the diseases like AIDS are global pandemic and causing millions of death every year. It is incurable in the absence of vaccine; but diseases like hepatitis, typhoid etc. are still pandemic in many reasons even after vaccine is available. Similarly, after being curable the Tuberculosis is also a challenge and widespread.

Vector borne diseases like malaria and dengue are curable but still playing deadly role with drug resistant parasite and spread over 100 of countries. Some new and communicable diseases have emerged in recent years like SARS (Severe acute respiratory syndrome), Swine flu and Ebola. In August 2010, the World Health Organization declared the swine flu pandemic. Ebola is a disease of humans and other primates caused by Ebola viruses. Between 1976 and 2013, the World Health

Organization reports a total of 24 outbreaks involving 1,716 cases. The largest outbreak is the ongoing epidemic in West Africa centered in Guinea, Sierra Leone and Liberia.

Still diseases like Malaria, Dengue, Diarrhoea, Tuberculosis, Typhoid, Tetanus, Measles, Hepatitis, Worm infestation, Leprosy are causing millions of death tolls around the globe; although these are curable and preventable; whereas the incurable diseases like AIDS is global pandemic.

Poverty, unawareness, lack of sanitation and hygiene are causes behind these communicable diseases and their deadly outbreak. The third world countries are most affected by these problems. The highly populated region of the World like India, China and African countries have highest prevalence of such common communicable problem. Beside government of these countries, the institutions like World Health Organization are continuously monitoring these problems. The progress of medical science had already established that such diseases can be eradicated. As now humanity is free from deadliest diseases like small pox.

