



## **BRIEF ACCOUNT OF HOUSING, WATER SUPPLY, SEWAGE AND REFUSE DISPOSAL**

### **INTRODUCTION**

Housing, water supply, sewage and refuse disposal are all important aspects of public health. These are the basic necessities of a healthy living and interrelated with each other. Starting from housing which is the most important requirement of a person's living, good quality drinking water and sanitation plays a crucial role in maintaining a healthy lifestyle. Regular surveys of local health conditions, supervision of water supplies and waste disposal are all basic necessities of public health care. A safe, reliable, affordable and easily accessible water supply is essential for good health. Many diseases can be spread out without proper accessories of a healthy living. Various waste materials need to be properly disposed in order to maintain cleanliness and prevention from different types of diseases.

### **HOUSING**

Shelter is the basic human requirement that needs to be met on priority basis. In importance, it is third after food and clothing. There are great links between improvements in housing and increased productivity, health, and other measures of well being. Housing is an important determinant of health, and substandard housing is a major public health issue. It is important for many aspects of healthy living and well-being. The demand for housing increases due to growth of population, rapid pace of industrialization and urbanization. Public health has long been involved in housing issues. Thus, the importance of housing was universally accepted from the dawn of history. Even the Neolithic man who lived between 10,000 and 2000 B.C. built durable habitation like pit dwellings, lake dwelling and beehive huts. However, its functions increased manifold over the years. Primitive men sought some kind of protection against wild animals and natural calamities. Housing protection is also sought against enemies as well.

With the development of knowledge and advancement of civilization, people became particular about sanitation, environment, privacy and location of house etc. Man became more conscious of better facilities, which make his life easy and very comfortable. With the invention of electricity and other facilities, the development of housing became more important. Then man began to bring electricity, toilet, bath and washbasin etc. within the wall of his house. House becomes useful in various ways. A house is the place where one can take the rest, stay and cook food. A house can also be used partly as a shop, work place, or a place for business and any other type of activities. Therefore, it clearly indicates the fact that a house is a part and parcel of a man's life.

Housing in general refers to living accommodations available for the inhabitants of a community. Throughout the nineteenth century, with the advent of the industrial revolution, housing as a problem worsened as urban population expanded. The crowding of cities and factory towns by workers led not only to severe housing shortages but also to the deterioration of existing housing and the growth of slums. The problem was aggravated by the erection of substandard housing for

workers and by speculators seeking high profits. Housing situation is also becoming worse, due to inadequacy of water, supply of housing by the combined efforts of all public, private and public etc.

### **Housing and Health**

The relationship between housing and health is multifaceted. A healthy home needs to have sound structure, to be free of hazards, to provide adequate facilities for sleeping, personal hygiene, the preparation and storage of food, to be an environment for comfortable relaxation and to provide the facility for exchange with friends, family and others.

The quality of the home has a substantial impact on health; a warm, dry and secure home is associated with better health. Poor housing is associated with increased risk of cardiovascular diseases, respiratory diseases, depression and anxiety. Housing-related hazards such as damp, mould, excess cold and structural defects increase the risk of illness and also the risk of an accident. Water intrusion is a major contributor to problems with dampness. Overcrowding and inadequate ventilation also increase interior moisture. Damp houses provide a nurturing environment for mites, roaches, respiratory viruses, and molds, all of which play a role in respiratory disease pathogenesis. Cold homes are linked to increased risk of cardiovascular, respiratory and rheumatoid diseases as well as hypothermia and poorer mental health. Old, dirty carpeting, often found in substandard housing, is an important reservoir for dust, allergens and toxic chemicals. The elderly are particularly at risk of health problems relating to accidents and excess cold in the home.

### **WATER SUPPLY**

A safe, reliable, affordable and easily accessible water supply is essential for good health. It has been estimated that a minimum 7.5 litres of water per person per day is required in the home for drinking, preparing food and personal hygiene, the most basic requirement for water.

Water supply is the provision of water by public utilities, commercial organizations, community endeavours or by individuals, usually via a system of pumps and pipes. Irrigation is covered separately. A clean water supply - in particular water that is not polluted with fecal matter from lack of sanitation - is the single most important determinant of public health. Water supply systems get water from a variety of locations after appropriate treatment, including groundwater (aquifers), surface water (lakes and rivers), and the sea through desalination. The water treatment steps include, in most cases, purification, disinfection through chlorination and sometimes fluoridation. Treated water then either flows by gravity or is pumped to reservoirs, which can be elevated such as water towers or on the ground (for indicators related to the efficiency of drinking water distribution see non-revenue water). Once water is used, wastewater is typically discharged in a sewer system and treated in a sewage treatment plant before being discharged into a river, lake or the sea or reused for landscaping, irrigation or industrial use.

Continuity of water supply is taken for granted in most developed countries, but is a severe problem in many developing countries, where sometimes water is only provided for a few hours every day or a few days a week. It is estimated that about half of the population of developing countries receives water on an intermittent basis.

Water supply can get contaminated by pathogens which may originate from human excreta, for example due to a break-down or design fault in the sanitation system, or by chemical contaminants.

Water supply issues have specific adverse effects on women in developing nations. Women are often the primary family member responsible for providing water as well as collecting it. Inclusion of women in the design and implementation

of water supply projects is an area of concern currently being addressed by multiple world organizations.

Depleting ground water table and deteriorating ground water quality are threatening the sustainability of both urban and rural water supply in many parts of India. The supply of cities that depend on surface water is threatened by pollution, increasing water scarcity and conflicts among users.

### **Water Supply and Health**

Inadequacies in water supply affect health adversely both directly and indirectly. Inadequate water supply also prevents good sanitation and hygiene. A poor water supply impacts health by causing acute infectious diarrhea and non-diarrheal disease which can arise from arsenic and fluoride.

According to the Environmental Protection Agency, the biggest water pollutants are dirt, to which heavy metals and chemical emissions attach; bacteria from septic systems and agricultural operations; and nutrients from fertilizers and animal waste. Heavy metals leached from chemical factories, industrial dump sites, mining operations and poisonous emissions have been known to increase the risk of cancer, slow development and lead to birth defects or reproductive health problems. Toxic waste in our water also increases cancer risk and threatens fertility if consumed regularly.

Disinfectants and organic contaminants such as fecal coliform and E.Coli in water may cause stomach discomfort or liver and kidney problems, leading to sickness and disease. The US Geological Survey informs us that waterborne pathogens may cause severe problems with digestive systems.

The World Health Organization (WHO) estimates that there are over 250 million worldwide cases of illnesses related to polluted groundwater annually, most in developing nations, including diagnoses such as cholera, typhoid and dysentery.

Pesticides, herbicides and insecticides polluting waterways may affect human health, causing liver damage; nervous system deterioration; and reproductive, endocrine and immune system damage, as noted in a report published by the University of New Mexico's Water Resources Program. Mercury in water is known to damage the central nervous system in adults and create neurological disorders in babies and children exposed to high levels.

### **SEWAGE**

Sewage is the term used for waste water that often contains faeces, urine and laundry waste. Waste products of a society had been collected, carried and disposed manually to a safe point of disposal by the sweepers, since time immemorial. This primitive method of collecting and disposing of wastes has now been modernized and replaced by a system in which these wastes are mixed with sufficient quantity of water and carried through closed conduits under the conditions of gravity flow. This mixture is called sewage. This autonomically flows up to a place from where it is disposed after giving it suitable treatment, thus avoiding the carriage of wastes. The treated sewage effluents may be disposed of either in a running body of water, such as a stream, or may be used for irrigating crops.

When untreated sewage is discharged into some river stream, floating solids present in the discharged sewage may be washed up on to the shore, near the point of disposal where they decompose and create foul smell and bad odour. The large amount of organic matter present in the discharged sewage will also consume the dissolved oxygen from the river stream in getting oxidized, and may seriously decrease the dissolved oxygen killing fish kills and other undesirable effects. The extent and type of treatment required depends upon the character and quality of both sewage and source of disposal.

## **Characteristics of sewage**

The quality of sewage can be checked and analysed by studying and testing its physical, chemical and bacteriological characteristics. Physical examination of sewage is carried out in order to determine its physical characteristics. This includes tests for determining turbidity, colour, odour and temperature. Tests conducted for determining the chemical characteristics of sewage helps in indicating the stage of sewage decomposition, its strength, and extent and type of treatment required for making it safe to the point of disposal. Chemical analysis is therefore carried out to determine its chemical characteristics such as total solids, pH value, chloride content, nitrogen content, dissolved oxygen, biochemical oxygen demand and chemical oxygen demand.

## **REFUSE DISPOSAL**

Refuse is a general term applied to solid and semi- solid waste materials other than human excreta. Refuse disposal is the act of disposing of rubbish and waste. Refuse disposal system is a technique for the collection, treatment, and disposal of the solid wastes of a community. The development and operation of these systems is often called solid-waste management.

House refuse consist of ashes, the remains of food of both animal and vegetable, of the waste water from sinks and bath. Refuse food should be for the most part burnt, so that the solid house refuse should consist of ashes. The old fashioned brick dust bin has now been very advantageously replaced by a movable galvanized iron receptacle with a well fitting lid, which has a useful quality being easily emptied and clean. It should be emptied often with not less than twice a week in summer and once in winter.

### **Types of Refuse**

There are two types of refuse i.e. semi-solid or solid

#### **Solid refuse:**

1. Rubbish
2. Garbage
3. Stable manure
4. Street sweepings
5. Ashes
6. Dead animals
7. Yard cuttings

#### **Semisolid refuse:**

1. Industrial and factory wastes
2. Radioactive waste from nuclear plants

## **CONCLUSION**

Housing, water supply, sewage and refuse disposal are all important aspects of public health. These are the basic necessities of a healthy living and interrelated with each other. Shelter is the basic human requirement that needs to be met on priority basis. In importance, it is third after food and clothing. A safe, reliable, affordable and easily accessible water supply is essential for good health. Water supply is the provision of water by public utilities, commercial organizations, community endeavours or by individuals, usually via a system of pumps and pipes. Sewage is the term used for waste water that often contains faeces, urine and laundry waste. Refuse is a general term applied to solid and semi- solid waste materials other than human excreta. Refuse disposal system is a technique for the collection, treatment, and disposal of the solid wastes of a community.