Committee: World Health Organization (WHO)

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Topic: Health Problems Caused by Sewage Water

I. INTRODUCTION

The World Health Organization proceeds from the main organ, Economic and Social Council, it appeared since the constitution of the committee which came into force on April 7th, 1948. The mission of World Health Organization is to build a better and healthier future for people all over the world. The committee works through more than 150 countries to stamp out infection diseases like influenza and some non communicable diseases like cancer.

Human beings are accustomed to the inadequate and unsuitable usage of water resources, which causes health problems and water-borne diseases. Nowadays, the groundwater and surface water is highly contaminated with heavy metals being persistent organic pollutants (POP’s), a strong case of them. Urban areas are broadly have a higher access to safe water, while rural areas are susceptible to sewage water; sewage is the term used for wastewater that often contains faeces, urine and laundry waste.
II. HISTORY OF THE CONFLICT

A. Main Actors

During the past years, sewage water has developed some crucial diseases which affect the human lives and the life quality, some of them are:

1. Gastroenteritis

The most commonly reported illnesses associated with the oral exposure to sewage water is generally called gastro-enteritis; which is an infection of the gastrointestinal tract. It can result from aerosol and sewage water.

2. Hepatitis

Hepatitis virus is the most frequently occurring vaccine-preventable disease. Severe cases cause people’s skin to become yellow or jaundiced in some cases, because their liver is not able to clear out its own bile.

3. Leptospirosis

Leptospirosis is an disease that affects people coming in contact with animals and its discharges; it is usually abound in the environment and underground sewers. Leptospira excreted in the urine of the infected animals. The prevalence rate was found to be 16%, this evidence was found to be maximum in sewer workers around cities and local areas.

4. Helicobacter Pylori

Is an increased risk for gastric cancer known in sewage workers; and is now considered as class I carcinogen by the International Agency for research in Cancer. In the prevalence of antibodies against Helicobacter Pylori with increasing age was observed in a group of 289 municipal workers.

5. Cryptosporidiosis

An intestinal infection characterized by diarrhea caused by a microscopic parasite Crypto which is one of the most common causes of water-borne disease in the world. It is transmitted by the fecal-oral route.
6. Giardiasis

An intestinal disorder outlined by abdominal discomfort and prolonged, intermittent diarrhea, caused by the protozoan1 “Giardia lamblia” and gained by drinking untreated water, like streams or ponds, contaminated with the feces of infected animals.

7. Poliomyelitis

Poliomyelitis is an infectious disease caused by a virus. The virus lives in an infected person's throat and intestines. It can be spread from a person's sneeze or coughs droplets or non-treated water guzzle2.

8. Salmonellosis

Salmonellosis comes, among other things from water source such as private wells that have been contaminated with the feces of infected humans or animals. The symptoms for this disease are; diarrhea, fever, and abdominal cramps3.

9. Shigellosis

Shigellosis is one of the most contagious types of diarrhea caused by bacteria4. It is a common cause of waterborne outbreaks in the United States, though most of these outbreaks occur in recreational water rather than in drinking water.

Annexe 2 “Pathogen and waterborne diseases”

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1 Unicellular protists that are represented in every kind of habitat and include some pathogenic parasite (Merriam Webster)
2 Eat or drink something greedily. (Cambridge Dictionary)
3 A sudden painful tightening in a muscle, often after a lot of exercise, that limits movement (Cambridge Dictionary)
4 A bacteria is a single cell-organism that can survive independently and viruses are not cells, are chains of DNA. (Stoppard, 2012)
10. Paratyphoid Fever and Typhoid Fever

Typhoid and Paratyphoid fever are most often acquired through consumption of water or food that has been contaminated by feces of an acutely infected, convalescent person or a chronic, asymptomatic carrier.

12. Yersiniosis

Main symptoms are fever, abdominal pain, and diarrhea, which is often bloody. Yersiniosis is most often acquired for instance by drinking contaminated unpasteurized milk or untreated water.

B. Key Points

1875: There were sewage outlets in Australia at five different points in the Harbour and each one were causing nuisance. After they noticed them, the committee in charged examine the outlets found at Rushcutters’ Bay.

1884: The first sanitary sewer system for the Boston Area, serving eighteen cities around this area. It collected raw sewage on the Moon island in the harbor. After some years, the Metropolitan Sewage District was formed.

1892: The construction of Melbourne's sewage system began with a farm treatment. A treatment farm was built at Werribee and a pumping station was built to sent the city’s waste.

1896: Cholera toxin has been a well known disease; this has been recognised as a major pandemic during this period of time.

1897: Sewage pollution has reached higher proportions in Sydney, since then, families around Australia have been connected to new water technology, Melbourne families were connected to the sewage system treated.

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5 Recovering from sickness or debility: partially restored to health or strength convalescent patients (Merriam Webster Dictionary)
1971: The manager of a trailer park in Pico Rivera, California, called the local health district to report an outbreak of diarrhea and stomach cramps among residents.

1991: The seventh pandemic in Celebes Islands in Asia occurred by entrance of the sewage water bacterium.

1999: 22,000 people were interviewed concerning with their health nine days after they exposed their faces in sewage water (Los Angeles).

2001: 26% of perishes (deaths) were caused by infectious diseases worldwide.

2002: The African Ministers Council of Water was formed in order to promote cooperation, security, social and economic development. The effective management of the continent’s water resources and services.

2011: A recombinant hepatitis E vaccine was licensed in China for the use of people ages 16 to 65 years old.

2011: The Karegnondi Water Authority is incorporated to provide and distribute water from Lake Huron to Flint (Michigan), and other communities around Genesee, Lapeer. This project involved the construction of sewage system and pipelines.

2013: Michigan, was one of the counties that were forced to release 2 billion and 82 million gallons of partially treated and diluted sewage, respectively, into the Detroit River. As the river links the upper and lower Great Lakes, this puts the health of the region’s entire watershed at risk. Detroit obviously doesn’t have the billions it needs to overhaul its sewer system.

2013: DFID UK organization proposed the creations of different stand pipes, pumps, toilets and sewage systems around villages. This will give more families, farmers and businesses access to drinkable and clean water.

2014: Residents started to complain about the Flint River, because of the color, rashes and bacterias, this become after the city do not provide control treatment.
2015: The Ontario Ministry of the Environment confirmed in a decision made on August 4, that wet weather is affecting the water quality, and this has an impact on Lake Ontario. The ministry decided that the City of Toronto will start issuing communications to the public about water quality following all wet weather events. The ministry has also decided that Toronto will report details about bypass events at wastewater treatment plants to the public in real-time. Despite the ministry's decisions, the City of Toronto have yet to implement any kind of public notification system.

2017: New Jersey's urban areas are facing particular water-infrastructure problems, exacerbated by coming deadline for establishing plans to control the sewage water problems and systems. Jersey’s work is a cross sector collaborative focusing on the water quality and its consequences.

2017: Due to the celebration of the water day which took place on, March 25th the European Commission has proposed various activities including; revision of the drinkable water and tools to stimulate the further uptake of reused urban areas; being this a central point of the 2030 agenda.

III. CURRENT HAPPENINGS

Nowadays, sewage water health problems have increased in a large percent in those areas where the economic resources are obtained by land and agro economic work. Examples of recent- large scale outbreaks of water-borne diseases such as cryptosporidiosis in the United Kingdom, Canada and Milwaukee; the report describes the largest outbreak recorded in Milwaukee in 1993, this outbreak in the U.S. history affected approximately 400,000 people about one fourth of the city's population, even though the casualties⁶ were 104 people. However, most outbreaks of waterborne illnesses in the U.S. can be traced to individual wells or small community systems, this time drinking water contaminated by sewage is a principal cause.

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⁶ loss in numerical strength through any cause, as death, sickness, among others. (dictionary.com)
Brazil, had an important event that marked the IOC and the World Health Organization as sewage water health problems and waterborne diseases; at the Olympic games 2016 that was held on Rio and Copacabana Beach. While the athletes were swimming and at the triathlon, the test results found high counts of active and infectious human adenoviruses; these viruses are known as intestinal infections like diarrhea and vomiting, it may also join with heart and respiratory illnesses.

However, on April 2013 Detroit was called its current sewage situation as another crisis. Its outdated sewage system have not been able to to keep up; therefore its wastewater treatment plant was beset with 1.5 billion gallons of water a day, well over the 930 million it is capable of handling.

The United States of America, has a water quality complex as The Atlantic newspaper described in 2015. His rate quality was because the same pollutants can be washed into surface water from agricultural land, industrial sites, and fertilized lawns dotted with pet waste, but the 3 to 10 billion of unrated water released from the US sewage-treatment plants per year cannot help but have an impacts.

After this encountered, the 2017 World Water Development Reports shows the improvement of sewage water management; therefore is as much about reducing pollution at the source. This reports clearly reflects the consensus among 31 members and 38 partners of UN-Water colleagues that issued related wastewater problems and waterborne diseases.

IV. KEY POINTS

- Sources of the sewage water on laborers on the agricultural area. This type of water is the only one accessible to them (agricultural laborers). On the other hand not consuming this products, would generate complications in the economic sector of agricultural area.

- Crucial diseases caused by sewage water.
The most grievous diseases (in each country) that a human being can come down with.

- Treatment for diseases in children and older people.
  During our lives being a small child or being an old person, could benefit the fact of being liable to some events, referring for instance to crucial diseases caused by sewage water.

- Emanation in new-born babies presenting any of these diseases
  Babies, are human beings who cannot fend for themselves, they need protection. Having any sewage water disease may allow the human being (babies or the family) to have problems emphasizing in health, and economic issues.

- The wastewater area may subsequently infect humans or animals through consumption or handling of the foodstuff
  Even though the World Health Organization focuses frequently on human beings, we should recognize that we are not the only specie on the earth, and that what we do affects other living things such as animals. The urgency to begin concerning about them and the quality of food and water they receive everyday, or even the fact that humans may consume the infected meat of the edible animals (such as cows and pigs) is crucial.

V. UN ACTIONS

In 2010 the General Assembly recognized that all people have the right to access to safe water.

As the international authority on public health and water quality, World Health Organization is leading global efforts to prevent water-borne disease transmission and alerts governments on the development of health-related goals and regulations. “This organization has developed a series of guidelines on water quality, in particular on drinking water, safe use of wastewater and the salubrity of recreational aquatic areas. The Guidelines for drinking water quality address risk management, and since 2004, the promotion of water safety plans, wastewater treatment companies, farmers, communities and individuals”.(World Health Organization, 2004)

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7 Series of Consequences (Thesaurus Dictionary)
8 fit to be eaten as food; eatable; esculent. (Merriam Webster Dictionary)
To identify and prevent risks before water has been contaminated has been included, In 2015, World Health Organization introduced the concept of Sanitation Safety Plan to support the implementation of the wastewater guidelines. World Health Organization is promoting effective risk assessment and management practices among all groups, including drinking water providers, wastewater treatment, companies, communities and individuals.

World Health Organization works closely with United Nations Children’s Fund in a number of areas related to water and health. For example, the integrated global action plan to end child deaths preventable by pneumonia and diarrhea by 2025 sets several preventive and therapeutic goals, including the achievement by 2030 of universal access to drinking water in health facilities and households. The means of application in health centers encompass several health areas, such as universal quality health coverage, and both agencies have established a work plan to progressively achieve universal access in health centers and at the national and global levels.

Also the United Nations has been implemented on Action the Sustainable Development of Small Island Developing States, referred to as the “Barbados Program of Action (BPOA)”, is a policy document that both addresses the economic, environmental, and social developmental vulnerabilities facing islands and outlines a strategy that seeks to mitigate those vulnerabilities (UNEP, 2002)

VI. BLOCK ANALYSIS

Latin America and Caribbean group.

More than 320 million people in Latin America are at risk of contracting different diseases due to water pollution. With the lack of treatment of the wastewater increases the pollution derived from the presence of pathogens, which currently affects a quarter of the rivers in Latin America.

In Latin America more than 75% of the wastewater is dumped into the environment without any treatment, contaminating the same sources of water that we use to drink. The lack of sanitation and hygiene is a crisis closer and evident than it seems.
In the Region, about 20,000 children die each year before the age of five because of acute diarrheal diseases, they could be preventable if access to adequate hygiene conditions and sanitation infrastructure and safe water.
The city of Coyhaique, south of Chile, is the most polluted in Latin America, reported the World Health Organization (WHO), despite having only 63,000 inhabitants.

The Caribbean is approaching the Millennium Development Goals in both areas, there are still 50 million people out of a total of 554 million people who lack access to clean water (34 million reside in rural areas) and 125 million lack sanitation improvements. Unless work is done on water sources, there is a risk of contamination and water becomes an important source of disease spread. On the other hand, the lack of improvements in sanitation is one of the main reasons for water pollution. According to the WHO, diarrhea morbidity could be reduced by 32% if sanitation was improved by installing well latrines, septic tanks and excreta with excreta manure. The reduction would be between 6% and 25%, of improving the water supply, through protected wells, public sources, wells with pipes.

**Western European and Other Groups.**

At the European region where agriculture accounts approximately 30% per cent of all total water abstraction and 55% per cent of consumptive water all around Europe its inadequate sewage systems are significant threat to public health; some countries identify private and small supplies as those for more liable to receive insufficient treatment to have protection for ground sources. Although, those countries with not enough resources have been reached outbreaks of water-borne diseases and minor problems are being encountered.

Although, some improvements have been made for the Western and surroundings of Europe. These improvements include measures to control demand and prevent, prevent contamination by improving water and sanitation at the international and local levels.

Many European countries have reported high concentrations of nitrates in drinking water by the sewage water in each country; incidents reported by diseases of sewage water (like methaemoglobinaemia) and gastrointestinal illnesses in 100 000 population are Hungary .26 in Slovekia .56, in Romania .74 and Albania 1.26.
During 11 years since 1996, Europe has not been reported outbreaks of diseases and waterborne disease in Germany, Lithuania and Norway, however, Spain reported 208 cases, Malta 162 and Sweden 53.

Over the last decade Germany has invested in sewage water systems, but it has also become in the exporter of sewage technology. The German Engineering Federation had exported waste water technology in 2011.

**Eastern European Group.**

Easter Europe, besides struggling with democracy, has also to deal with a pillaged environment, in which not just polluted air is included but also water sewage and its devour. In this part of the continent, sewage is illustrated with the groundwater and the acid rains (40 per cent of 15 million of people living in this area are being contrived) which many people use as drinkable water or to sanitize themselves.

By acting this way, life threatening diseases may occur, not to mention the deformations in newborn babies. In Poland people from 30 to 40 years old are dying from cancer, heart or respiratory diseases.

In Russia, 60 percent of drinking water does not meet the current sanitary requirements. Officials have warned of increasing outbreaks of sewage water related diseases that include cholera, salmonella, typhoid fever, and viral hepatitis, that is why in many areas water is imported from other regions.

Also, Eastern European countries are preparing to address the real deal about water scarcity into human health by adapting measures to sewage water, drainage and wastewater, being some examples, the following.

The government of Easter Europe inaugurated some specialized environmental departments in water treatment or even the European Environmental Agency has launched a project specialized on wastewater treatment.
African Group.

In the African continent, the maintenance and the operation of the wastewater is not enough on the sewage water infrastructure, this is a cause that concern all the areas; especially South Africa. In South Africa many water studies revealed that this problem contributes to the pollution of water resources such as in the domestic area and other purposes.

In 2008, a number of incidents occurred in the most municipalities and countries of Africa, even though the country mentioned before was the part that was affected the most by sewage water plants are the pollution of it.

Eventually, around Africa there were outbreaks of fever in many parts of South Africa, the outbreak originated in the town’s water supply, was suspected to have been contaminated with human faeces. Another incident occurred in the Eastern Cape where 94 patients were treated with diarrhoea symptoms while 18 babies drowned.

Asian Group.

The continent of Asia is carrying the largest contaminated water that transmits diseases around the world. A large part of eastern Asia has now descended into potable water from 1700 cubic meters per person and is set to continue descending to 400 cubic meters by 2050 per person.

With the climate phenomenon in 2015, which has dissipated the monsoons of the south-west of the country, the lack of water supply has fostered the proliferation of waterborne diseases in Karnataka, where 49% of people meet their needs outdoors. Children living below the poverty line, especially in the most marginalized villages, easily become ill with diarrhea, dysentery, gastroenteritis, cholera, as well as increasing child mortality, stunting and malnutrition. Dengue, favored by stagnant water, in 2015 reached its maximum in the country with 4,691 cases and 9 deaths, according to statistics from the Federal Ministry of Health. Most of the income recorded at Vani Vilas Hospital for Children and Women in Karnataka was for dengue. The challenge that remains urgent is to create a water

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⁹ A periodic wind especially in the Indian Ocean and southern Asia. (Merriam Webster)
and sanitation infrastructure as well as to convince public opinion of its effectiveness, the need to eradicate open defecation and open sewers.

The Regional Water Quality Conference, which will be held from 23 to 26 November, will report that "several countries in South and Southeast Asia have confirmed the existence of arsenic in water intended for human consumption," says the World Health Organization (WHO) in a statement.

The presence of this toxic substance in drinking water threatens the health of 50 million people in India, China, Vietnam, Pakistan, Nepal, Myanmar and Cambodia, according to reports from the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF).

The objectives of the meeting, which will be attended by environmental officials from a dozen Asian countries, are "raising awareness of the serious effects of poor water quality" and "mobilizing governments and economies."
VII. REFERENCES


• World Health Organization, (N/D),*About WHO:Who we are,what we do*. (online). Retrieved from: [http://www.who.int/about/en/](http://www.who.int/about/en/)


B. Recommended Sources
http://www.who.int/mediacentre/factsheets/fs391/es/
http://www.fao.org/docrep/w5367e/w5367e04.htm
VIII. ANNEXES:

Annex 1: Detroit has a major sewage problem

Annex 2: Pathogen and waterborne diseases

Annex 3: Brazil Olympic Games water problem

Annex 4: Death from water problems

Deaths from unsafe water, sanitation and hygiene


Annex 5: Percentage of waterborne-diseases outbreaks


Annex 7: Ranges of faecal contamination