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Communicable Diseases

Dr. Latefa Dardas

Communicable Diseases

- Communicable, or infectious diseases, are caused by microorganisms such as bacteria, viruses, parasites and fungi that can be spread, directly or indirectly, from one person to another. Some are transmitted through bites from insects while others are caused by ingesting contaminated food or water.
- Preventing and controlling the spread of disease is at the heart of much public health work. From influenza and Lyme disease to malaria and Ebola, outbreaks of infectious diseases can have an extraordinary impact on human health.

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How do these communicable diseases spread?

- physical contact with an infected person, such as through touch (staphylococcus), sexual intercourse (gonorrhea, HIV), fecal/oral transmission (hepatitis A), or droplets (influenza, TB)
- contact with a contaminated surface or object (Norwalk virus), food (salmonella, E. coli), blood (HIV, hepatitis B), or water (cholera);
- bites from insects or animals capable of transmitting the disease (mosquito: malaria and yellow fever; flea: plague); and
- travel through the air, such as tuberculosis or measles.

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Dengue Fever

- Dengue is a mosquito-borne viral infection transmitted by Aedes mosquitoes. This mosquito also transmits chikungunya, yellow fever and Zika infection.
- The infection causes flu-like illness, and occasionally develops into a potentially lethal complication called Dengue haemorrhagic fever (DHF) or severe dengue.
- The global incidence of dengue has grown dramatically in recent decades. About half of the world's population is now at risk.
- Dengue is found in tropical and sub-tropical climates worldwide, mostly in urban and semi-urban areas.
- Severe dengue is a leading cause of serious illness and death among children in some Asian and Latin American countries.

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Dengue Fever-Symptoms

- Infected humans are the main carriers and multipliers of the virus. Dengue should be suspected when a high fever (40°C/104°F) is accompanied by 2 of the following symptoms: severe headache, pain behind the eyes, muscle and joint pains, nausea, vomiting, swollen glands or rash. Symptoms usually last for 2–7 days, after an incubation period of 4–10 days after the bite from an infected mosquito.

- Severe dengue is a potentially deadly complication due to plasma leaking, fluid accumulation, respiratory distress, severe bleeding, or organ impairment. Warning signs occur 3–7 days after the first symptoms in conjunction with a decrease in temperature (below 38°C/100°F) and include: severe abdominal pain, persistent vomiting, rapid breathing, bleeding gums, fatigue, restlessness and blood in vomit. The next 24–48 hours of the critical stage can be lethal; proper medical care is needed to avoid complications and risk of death.

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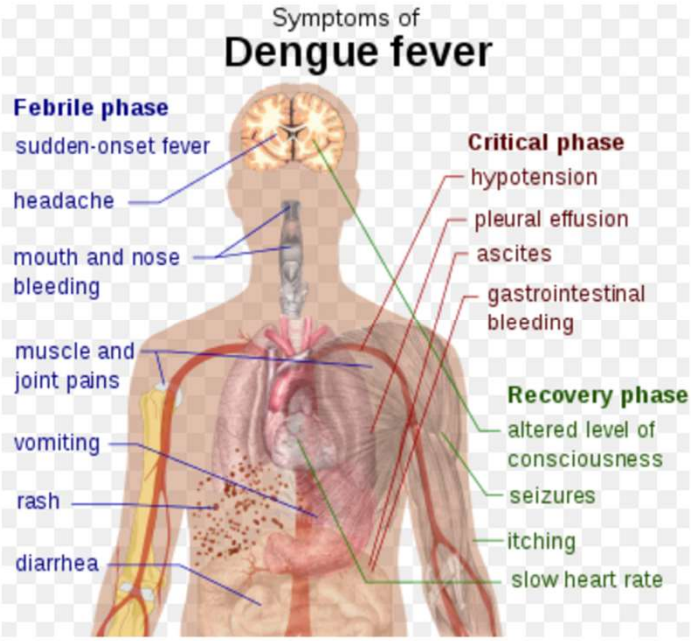

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Dengue Fever

- There is good evidence that sequential infection with the different serotypes of dengue virus increases the risk of more severe disease that can result in shock syndrome and death.
- There is no specific treatment for dengue/ severe dengue, but early detection and access to proper medical care lowers fatality rates below 1%.
- A dengue vaccine has been licensed by several National Regulatory Authorities for use in people 9-45 years of age living in endemic settings.
- Dengue prevention and control depends on effective vector control measures. *See next slide…*

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Dengue Fever-Prevention

- Preventing mosquitoes from accessing egg-laying habitats by environmental management and modification;
- Disposing of solid waste properly and removing artificial man-made habitats;
- Covering, emptying and cleaning of domestic water storage containers on a weekly basis;
- Applying appropriate insecticides to water storage outdoor containers;
- Using of personal household protection such as window screens, long-sleeved clothes, insecticide treated materials, coils and vaporizers;

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Dengue Fever-Prevention

- Improving community participation and mobilization for sustained vector control;
- Applying insecticides as space spraying during outbreaks as one of the emergency vector-control measures;
- Active monitoring and surveillance of vectors should be carried out to determine effectiveness of control interventions.

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Cholera

- Cholera is an acute diarrhoeal infection that can kill within hours if left untreated. It is caused by ingestion of food or water contaminated with the bacterium Vibrio cholerae.
- Cholera remains a global threat to public health and an indicator of inequity and lack of social development. Researchers have estimated that every year, there are roughly 1.3 to 4.0 million cases, and 21 000 to 143 000 deaths worldwide due to cholera.
- Most of those infected will have no or mild symptoms, and can be successfully treated with oral rehydration solution.

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Cholera-Symptoms

- Cholera is an extremely virulent disease that can cause severe acute watery diarrhoea. It takes between 12 hours and 5 days for a person to show symptoms after ingesting contaminated food or water.
- Most people infected with V. cholerae do not develop any symptoms, although the bacteria are present in their faeces for 1-10 days after infection and are shed back into the environment, potentially infecting other people.
- Among people who develop symptoms, the majority have mild or moderate symptoms, while a minority develop acute watery diarrhoea with severe dehydration. This can lead to death if left untreated.

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Cholera-Symptoms

- The symptoms of cholera include diarrhoea, nausea and vomiting, and severe dehydration. Diarrhoea due to cholera often has a pale, milky appearance that resembles water in which rice has been rinsed, also known as rice-water stool.
- The signs and symptoms of cholera in children are similar to adults but they may also experience fever, extreme drowsiness, convulsions or even coma. Only about 1 in 10 infected people develop the typical signs and symptoms of cholera, usually within a few days of infection.

Cholera

- Cholera can be endemic or epidemic.
- A cholera-endemic area is an area where confirmed cholera cases were detected during 3 out of the last 5 years with evidence of local transmission (meaning the cases are not imported from elsewhere).
- A cholera outbreak/epidemic is defined by the occurrence of at least 1 confirmed case of cholera with evidence of local transmission in an area where there is not usually cholera.

Cholera

- Cholera transmission is closely linked to inadequate access to clean water and sanitation facilities. Typical at-risk areas include peri-urban slums, where basic infrastructure is not available, as well as camps for internally displaced persons or refugees, where minimum requirements of clean water and sanitation have not been met.

- The consequences of a humanitarian crisis – such as disruption of water and sanitation systems, or the displacement of populations to inadequate and overcrowded camps – can increase the risk of cholera transmission, should the bacteria be present or introduced. Uninfected dead bodies have never been reported as the source of epidemics.

Cholera: Prevention and Treatment

- A multifaceted approach is key to prevent and control cholera, and to reduce deaths. A combination of surveillance, water, sanitation and hygiene, social mobilisation, treatment, and oral cholera vaccines are used.
- Cholera is an easily treatable disease. The majority of people can be treated successfully through prompt administration of oral rehydration solution (ORS). The WHO/UNICEF ORS standard sachet is dissolved in 1 litre (L) of clean water. Adult patients may require up to 6 L of ORS to treat moderate dehydration on the first day.
- Severely dehydrated patients are at risk of shock and require the rapid administration of intravenous fluids. These patients are also given appropriate antibiotics to diminish the duration of diarrhoea, reduce the volume of rehydration fluids needed, and shorten the amount and duration of V. cholerae excretion in their stool.

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Cholera: Prevention and Treatment

- Mass administration of antibiotics is not recommended, as it has no proven effect on the spread of cholera and contributes to increasing antimicrobial resistance.
- Rapid access to treatment is essential during a cholera outbreak. Oral rehydration should be available in communities, in addition to larger centres that can provide intravenous fluids and 24 hour care.
- Currently there are 3 WHO pre-qualified oral cholera vaccines: Dukoral®, Shanchol™, and Euvichol®. All 3 vaccines require 2 doses for full protection treatment, the case fatality rate should remain below 1%.

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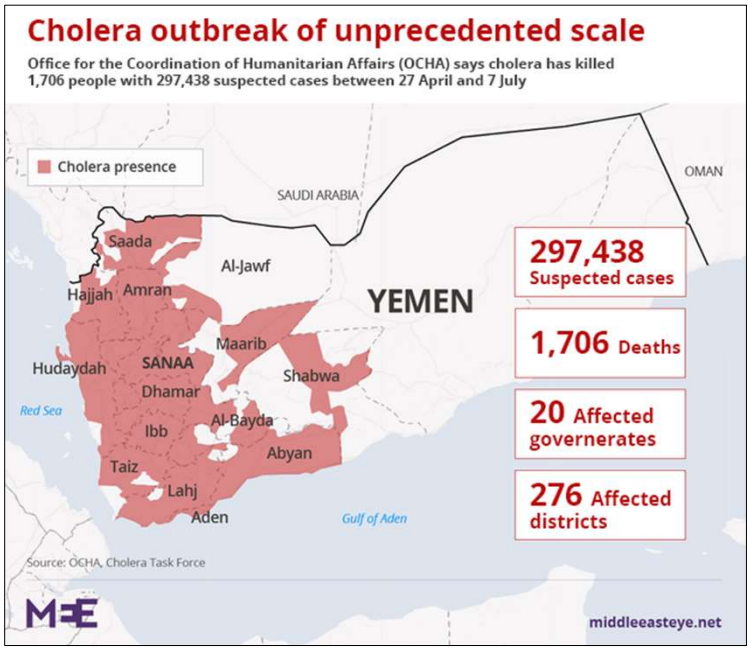
Amidst the devastation of war in Yemen…



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The Story of Cholera: Summary

https://www.youtube.com/watch?v=jG1VNSCsP5Q

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