Diarrhoea: A public health concern in India

Mains (GS II) – *Issues relating to development and management of Social Sector/Services relating to Health, Education.*

Why in News?

Recent study of to the World Health Organization (WHO) study, reveals that diarrhoeal disease is the leading cause of death among children (1-5 years) annually.

What is Diarrhoea?

- **Diarrhoea** – It is defined as the passage of 3 or more loose or liquid stools per day (or more frequent passage than is normal for the individual)
- Diarrhoea is usually a symptom of an infection in the intestinal tract, which can be caused by a variety of bacterial, viral and parasitic organisms.
- Infection is spread through contaminated food or drinking-water, or from person-to-person as a result of poor hygiene.
- **Types** - There are 3 clinical types of diarrhoea:
  - **Acute watery diarrhoea** – Lasts several hours or days and includes cholera
  - **Acute bloody diarrhoea (Dysentery)** – Bloody stools associated with fever and lasts upto 14 days.
  - **Persistent diarrhoea** – Lasts 14 days or longer.
- **Complication** - During a diarrhoea, *water and electrolytes* (sodium, chloride, potassium and bicarbonate) are lost through liquid stools, vomit, sweat, urine and breathing.
- It leads to dehydration and cause mortality in children.

What are the causes for diarrhoea?

- **Infection** – Pathogens were the leading cause for the diarrhoeal disease.
  - **Viral pathogens** – Rotavirus, norovirus, adenovirus and astrovirus.
  - **Parasitic pathogens** – Cryptosporidium, Giardia and Entamoeba spp.
  - **Bacterial pathogens** – E. coli, Salmonella, and Shigella

> ***Rotavirus*** *is a top viral cause in kids, leading to 10–20% of cases and severe illness often leading to hospitalization.*

- **Malnutrition -** Malnutrition in children makes them more vulnerable to diarrhoea.
- **Water contamination** – Contamination of water with faecal matters from sewage, septic tanks and latrines, is of particular concern.
- **Poor hygiene -** Diarrhoeal disease can also spread from person-to-person, aggravated by *poor personal hygiene*.
- Food is another major cause of diarrhoea when it is prepared or stored in unhygienic conditions.
- **Unsafe storage -** *Unsafe domestic water storage* and handling are also an important risk factor.
- **Weak immunity** - Kids with malnutrition or HIV are at higher risk.

Treatment
• **Oral rehydration solution (ORS)** - A mix of water, salt, and sugar replaces lost fluids; works for 90% of cases. • **Zinc supplements** - Cuts diarrhoea time by 25% and stool amount by 30%. • **IV fluids** - Used for severe dehydration or shock when kids can't drink. • **Hydration** - Rapid hydration is key since antibiotics don't work on rotavirus. • **Hospital care** - Severe dehydration needs hospital treatment.

What is the burden of diarrhoeal diseases in India?

- **High prevalence** – India has among the highest incidence of diarrhoeal illnesses worldwide, with children under five experiencing an average of 2 to 2.3 episodes per year.
- **High number deaths** – They accounts for *third leading cause of death for children under five*, with 443,832 deaths yearly, and India bears a significant share.
- **Affects nutrition** – Diarrhoea is a leading cause of malnutrition, worsening children's immunity.
- **Sanitation issues** - 780 million lack safe water, and 2.5 billion lack good sanitation worldwide, hitting India hard.
- **Regional differences –** States such as Uttar Pradesh, Bihar, Madhya Pradesh, and Rajasthan experience a higher diarrhoeal burden, primarily due to weaker sanitation infrastructure.
- **Low awareness** - Only 50–60% of Indian kids get ORS and zinc due to poor knowledge.

What is the role of sanitation and vaccination in diarrhoea control?

- **Sanitation prevents deaths** - WHO says better sanitation could stop 60% of diarrhoea deaths in India.
- Better toilets and waste systems stop germs, cutting over half of diarrhoea deaths.
- Prevents the spread - Simple everyday hygiene practices can go a long way in preventing rotavirus infections, which spread through the fecal-oral route, often due to poor hygiene, contaminated food, and unsafe drinking water.
- **Clean water supply** – Piped water across India could prevent 4,00,000 diarrhoea deaths as per WHO's study.
- **Rural focus** - Better sanitation in villages could close the gap with cities.

- **Vaccines lower cases** - Following the introduction of rotavirus vaccination in 2016, there has been a noticeable decline in diarrhoeal diseases, particularly those caused by rotavirus.

  India's national immunisation schedule includes three doses of the rotavirus vaccine at 6, 10, and 14 weeks of age.

What lies ahead?

- Sanitation push through Swachh Bharat for cleaner water and toilets, aims to cut diarrhoea deaths significantly.
- Raising awareness to avail simple treatments like ORT and zinc.
- Promoting personal hygiene practices among citizen through campaigns
- Vaccination of infants before six to eight months, as they are highly susceptible to infections during this period.
- Preventive measures such as exclusive breastfeeding for the first six months, proper hygiene, safe drinking water, and avoiding unhygienic food, could also go a long way.

References

1. The Hindu| Diarrhoeal Disease a Public Health Concern in India
2. WHO| Diarrhoeal Disease

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