



Water, Sanitation and Hygiene: Foundations for Community Health and Sustainable Development

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DESCRIPTION

Water, sanitation and hygiene, often referred to collectively as WASH, represent fundamental components of public health and human development. Access to safe drinking water, adequate sanitation facilities, and proper hygiene practices directly influences the prevention of infectious diseases, child survival, educational attainment, and economic productivity. Despite global progress in infrastructure and policy, millions of people worldwide still lack reliable access to clean water and safe sanitation services. Addressing these gaps remains a central priority for improving health outcomes and promoting social equity.

Safe water is essential for drinking, cooking, cleaning, and personal hygiene. When water sources are contaminated with pathogens, chemicals, or waste, communities face increased risks of illnesses such as cholera, dysentery, typhoid fever, and hepatitis A. Contaminated water also contributes to parasitic infections and chronic health conditions resulting from long-term exposure to harmful substances. Ensuring water quality involves protecting sources from pollution, treating water before distribution, and maintaining safe storage practices at the household level. Infrastructure such as wells, boreholes, piped systems, and treatment plants plays a significant role in delivering safe supplies to communities. Sanitation refers to the safe management of human waste, including the use of toilets, sewage systems, and waste treatment facilities. Inadequate sanitation allows pathogens to spread through water, soil, and food, increasing disease transmission. Open defecation remains a challenge in certain regions, often due to poverty, lack of infrastructure, or cultural factors. Building and maintaining sanitation facilities requires community involvement, appropriate technology, and sustained funding. Waste treatment processes must ensure that sewage is managed safely to prevent contamination of water bodies and agricultural land.

Hygiene practices, particularly handwashing with soap, are among the most effective measures for preventing infectious diseases. Regular handwashing before eating and after using the toilet significantly reduces the transmission of diarrheal diseases and respiratory infections. Promoting hygiene behavior requires education, access to soap and water, and reinforcement through community initiatives. Schools play a vital role in teaching children proper hygiene habits, which can influence household practices and long-term community health.

The health benefits of improved water, sanitation, and hygiene extend beyond disease prevention. Children living in environments with adequate sanitation are less likely to experience repeated infections that impair growth and cognitive development. Women and girls benefit from access to safe and private sanitation facilities, which support menstrual hygiene management and reduce risks of harassment or violence associated with traveling long distances to access toilets. Time saved from collecting water can be redirected toward education, income-generating activities, or childcare.

Urbanization presents unique challenges for WASH systems. Rapid population growth in cities often outpaces infrastructure development, leading to informal settlements with limited access to safe water and sanitation services. Overcrowding increases the risk of outbreaks when sanitation systems are inadequate. Integrated urban planning, investment in infrastructure, and community engagement are necessary to address these pressures effectively. Climate change further complicates water and sanitation management. Increased frequency of floods and droughts affects water availability and quality. Flooding can damage sanitation systems and contaminate water sources, while drought conditions reduce water supplies needed for hygiene and cleaning. Adaptation strategies include climate-resilient infrastructure, improved water storage capacity, and diversified water sources.

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CONCLUSION

Water, sanitation and hygiene form essential pillars of public health and human development. Access to clean water, effective waste management, and consistent hygiene practices significantly reduce disease burden and improve quality of life. Addressing infrastructure gaps, promoting behavioral change, and adapting to environmental challenges are central to

advancing global health. Through sustained commitment and collaborative action, communities can strengthen resilience, enhance well-being, and create healthier environments for present and future generations. Innovations in water treatment and sanitation technologies continue to expand access in resource-limited settings. Low-cost filtration systems, decentralized wastewater treatment units, and water-saving sanitation designs offer adaptable solutions.