### Title: Descriptive Study of Acute Watery Diarrhea Outbreak in District Malakand, Khyber Pakhtunkhwa, May-June 2022

*Author & Co-author(s) Name(s): Dr. Zahid Sajjad\*, Dr. Noor e Saba, Dr. Sadaqat Hussain, Dr. Anothony Alamzeb, Qamar Abbas*

Author, Alumnus FELTP, Department of Health, Khyber Pakhtunkhwa zahidsajjad91@gmail.com 00923055333535

**ABSTRACT:**

**Background**: An outbreak of acute watery diarrhea (AwD) was reported in a remote area of District Malakand on July 1, 2021. A team of FELTP (Field Epidemiology and Laboratory Training Program) fellows, deputed by the Director General of Health Services, Khyber Pakhtunkhwa, was tasked with investigating the risk factors and implementing control measures to contain the outbreak.

**Methods**: A descriptive study was conducted utilizing secondary data from health clinics and hospitals, complemented by primary data acquired through semi-structured interviews and questionnaires. A working case definition was formulated following initial interviews with doctors, healthcare workers, and patients. Patient information, including biodata and clinical signs and symptoms, was collected and recorded. Medication dispensed against Medical Record (MR) numbers was cross-checked. Patients were interviewed regarding signs, symptoms, food consumption, water source, and other potential risk factors, including travel history. Two stool samples and 9 water source samples from household and community tanks were collected for laboratory investigation. Data pertaining to time, place, person, and clinical information were gathered and analyzed using MS Excel and EPI Info 7.0.

Results: A total of 41 cases were recorded, with a female-to-male ratio of 1:1.5. The median age was 14 years (range: 7-73). The most prevalent symptoms included diarrhea (97%), vomiting (88%), nausea (76%), and abdominal pain (73%). Seventeen cases were treated for dehydration, with 47% classified as severely dehydrated. The case fatality rate was 0. Cases began to appear on May 2nd, peaking (n=16) on the subsequent day. The cases leveled off on the fourth day of the outbreak. Out of 15 water source samples tested, 9 tested positive for coliform bacteria. Both stool samples tested positive for coliform. Cultures from the samples collected could not be processed.

**Conclusion**: The outbreak was determined to be caused by the consumption of contaminated water stored in a community tank. Water samples from multiple households were tested and found unfit for drinking, revealing the presence of coliform bacteria.

**BIOGRAPHY:**I am Dr. Zahid Sajjad, a Public Health professional working with Department of Health, Khyber Pakhtunkhwa and Alumnus FELTP 13th Cohort. Over the past decade I have worked on multiple positions with department of Health including, EPI Coordinator, IVMP Coordinator, and Public health Coordinator. I have also worked with World Health Organization and Emergrancy Response Officer in global drive against Polio( GPEI). As a Fellow FELTP, we were tasked to conduct investigation of AwD outbreak reported from District Malakand and under Technical support of Dr. Qasim Afridi, TSO CDC, we conducted field investigation of the outbreak.

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