Introduction: Dengue infections are a major health problem and there is an increasing necessity to strength its epidemiological surveillance in Peru due to the low laboratory-confirmation rate (<50%). To assess the frequency of Dengue virus (DENV) serotypes and describe its clinical presentation in patients with acute febrile illness, an endemic area in northern Peru.

Methodology: A total of 213 serum samples from 8 health care centers were studied for the presence of DENV via RT-PCR real time, NS1 antigen and IgM antibodies from
march to August 2016. This study was approved by the Research Ethics Board of the Hospital Regional de Cajamarca, Peru.

**Results:** Dengue virus RNA was detected in 28.64% (61/213) of samples via qPCR. For the anti-Dengue antibody tests, the NS1 antigen was detected in 30.52% (65/213) and IgM antibodies were found in only 9.39% (20/213) of patients. DENV-2 was the most predominant in 60.65% (37/61); DENV-3 was found only 1 sample and 37.70% (23/61) couldn’t be characterized for any serotype; No DENV-1 or DENV-4 serotypes were observed. The most common symptoms accompanying fever were: Headache (96.72%), Muscle pain (86.89%), Joint pain (83.61%), low appetite (73.77%) and retro-orbital pain (72.13%).

**Conclusions:** DENV-2 is currently a predominant serotype. Further investigations should be conducted to evaluate the use of RT-PCR as a reliable method for DENV detection as well as for serotype surveillance in Peru.