

TITLE: EVALUATION OF WATER QUALITY OF COLLECTIVE ALTERNATIVE SOLUTIONS IN FRONTIER REGION, FOZ DO IGUAÇU, 2016

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ABSTRACT:

Freshwater potentials are favorable for the various uses, and in a frontier region, a present modality is the collective supply, with underground or superficial abstraction, defined as a collective alternative solution (SAC). In order to control the quality of water in such places, Brazilian legislation is based on Administrative Rule No. 2.914 of 2011, which provides for procedures to control and monitor the quality of water for human consumption and its drinking water standard. In the microbiological aspect, this legislation establishes that the presence / absence of total and thermotolerant coliforms or *Escherichia coli*, and the count of heterotrophic bacteria, are determined in the water to check its potability. This study aimed to determine the quality of the water consumed in SACs in the frontier region in relation to the detection of total coliforms, *Escherichia coli* and heterotrophic bacteria. The collections were carried out in solutions of collective water supply in the border region, Foz do Iguaçu, from January 1, 2016 to December 31, 2016 and processed in the Lacen / PR - Fronteira Unit. To do so, the heterotrophic bacteria were quantified in water and the total coliforms and *Escherichia coli* using the SMEWW method, 1998. A total of 956 samples analyzed, of which: 46 cisterns, 77 source/mine, 385 random capture points, 8 post-filtration/pre-disinfection and 440 of the treatment exit/post-disinfection. It was observed that 299 samples (31.3%) were unsatisfactory, since the presence of *Escherichia coli* was detected, which is extremely worrying, considering that this microorganism can result from a simple gastroenteritis or evolve until lethal cases, mainly in children, elderly, pregnant and immunosuppressed. Approximately 31% of the analyzed samples are in disagreement with the legal microbiological standards, because they present contamination by *Escherichia coli*, suggesting precarious hygienic-sanitary conditions. It is recommended the adoption of a permanent health education program regarding the importance of sanitizing reservoirs and chemical and physical treatment of water consumed in collective alternative solutions of the border region, as well as maintaining a systematic evaluation of the water system or solution, from the perspective of health risks, based on the criteria of occupation of the basin contributing to the source, history of water characteristics, physical characteristics of the system, operational practices.

Keywords: Collective alternative solution, water, microbiological surveillance, public health

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