

WATER QUALITY FOR HUMAN CONSUMPTION: A PREVENTIVE MANAGEMENT APPROACH

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INTRODUCTION

With the advent of Law 11.445/2007, a new approach has been given to the process of drinking water quality assurance, especially regarding regulatory services. The "Portaria" 2.914/2011 establishing the need for water supply utility to maintain systematic evaluation system from health risks perspective based on distributed water, according to the principles of the Water Safety Plans - WSP, recommended by the World Health Organization - WHO aligned with regulatory agencies.

The proposed plans Guides for Water Quality Human Consumption, published by WHO, include water supply systems management with emphasis on population health. Water quality management based on a preventive approach of risk assists in ensuring control of drinking water safety. Regarding microbiological and chemical control water requires the development of management plans that, when implemented, provide the basis for system protection and process control, ensuring that the number of pathogenic organisms and concentrations of chemical substances pose no risk to public health, and the water is acceptable by consumers (WHO, 2011).

For the above, this study assesses the potential and application of strategies for WSP implementation in the State of Minas Gerais through Management Plan with the involvement of institutional actors: Regulation, Health Sector and Water Supply and Sewerage Utilities.

METHODS

This article is developed from a document comparative analysis of the World Health Organization - WHO regarding with Water Safety Plans - WSP (WHO, 2011), Law 11.445/2007, "Portaria" 2.914/2011 (BRAZIL, 2011) and the activities of Technical-Operational Inspections (2011-2013) produced by Water Supply and Sewerage Regulatory Agency of Minas Gerais/ARSAE-MG, targeting the WSP methodological principles' application, as well as its focus on Brazilian law.

RESULTS & DISCUSSION

Drinking Water Quality System Management

The Management Plan: regulation - surveillance - control is the institutional management level comprehending regulatory agency, health sector, engaged in surveillance, and utility which performs the control, in favor of service quality, and specifically, water quality. These three activities are designed to ensure drinking water quality and the resulting consumers' health in a process of management actions, mainly preventive (Figure 1).

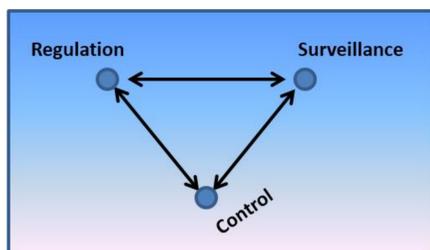


Figure 1: Management Plan Interface: Regulation – Surveillance – Control

ARSAE-MG, while responsible for enacting technical and economic rules for public water supply and sewerage services in Minas Gerais, it has sought to play a role promoting the Water Safety Plan use to ensure adequate water quality intended for human consumption, in technical and operating inspections, through a working methodology based on Management Plan.

In this sense, it was established a Technical Cooperation Agreement between the State of Minas Gerais, through the Secretary of State for Health of Minas Gerais and ARSAE-MG aiming to promote information access and joint activities for water quality surveillance for human consumption in the state of Minas Gerais highlighting, therefore, the WSP Management Plan use and promotion.

Water Safety Plans - WSP

The WSP is an instrument with preventive approach, in order to ensure the water safety for human consumption, including the minimization of watershed contamination, the elimination or removal of contamination through water treatment and prevention of (re) contamination in distribution system (Figure 2).

We emphasize the importance of preventive management approach that ensures the consistency of water quality for human consumption, in order to consider that water supply systems, in addition to meeting legally established quality standards, must submit performance levels that warrant a consumer confidence strengthening in the water quality supplied to them.

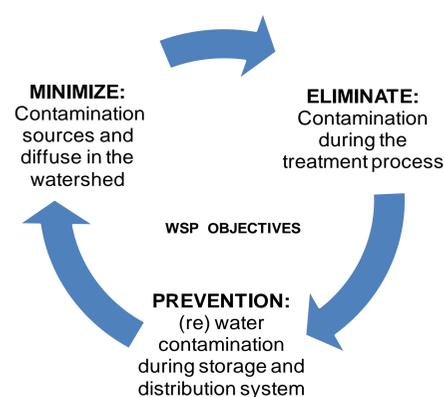


Figure 2: Objectives of Water Safety Plans

Thus, there are the three main components of the PSA are:

- Evaluation of water supply system in order to determine whether the system in all its components can provide water that meets the quality requirements set out in legislation with identifying hazards and critical control points.
- Monitoring of control measures for identified hazards to ensure water quality.
- Establishment of management plans that include the documentation of the evaluation and monitoring of the system, a description of measures taken in normal operation or in exceptional cases and documentation and communication (e.g., those responsible for environmental monitoring, regulatory agencies and the user population.)

Regarding drinking water quality WHO emphasizes WSP as a key element for the development of strategies aimed for continuous water delivery service improvement (WHO, 2011). In this sense, it emphasizes that the "Portaria" 2.914/2011 highlights maintaining joint environmental surveillance with regulatory authorities regarding faults' detection on water quality supply services.

Therefore, water quality control regulatory actions are not merely supervise but follow and assess best practices throughout the water system, and identifying risk factors and control measures' adoption preventively or correctively.

CONCLUSIONS

Notably, the Brazilian legislation aligned with WSP principles in keeping systematic assessment of systems from health risks' perspective and more comprehensive view of the quality of water supply delivery services.

Thus, ARSAE-MG has been using instrument member of WSP in the water quality supervision. However, it is necessary to enhance the discussion on the Water Safety Plans' implementation in the country, through discussions among regulatory agencies to establish of a consensus on this issue.

So, it must be promoted integration between Regulation, Health Sector and Water Supply and Sewerage Utilities to ensure the safety of water supplied to consumers and the application of the following concepts preventive, shared, participatory, transparent and effective management to promoting water quality.

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