

Note on the French Experience for the Choice of the Parameter for the Analytical Survey and Control of Legionella in Water in France from 1999 to 2022

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Received date: June 19, 2023; Accepted date: June 29, 2023; Published date: July 06, 2023

Citation: Hartemann Philippe, Squinazi Fabien, (2023), Note on the French Experience for the Choice of the Parameter for the Analytical Survey and Control of Legionella in Water in France from 1999 to 2022, *Clinical Research and Studies*, 2(4); DOI:10.31579/2835-2882/023

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The first French regulations for the control of Legionellosis were created at the end of the 90s, after two mediatic outbreaks which occurred in Paris. The first outbreak occurred during the summer of 1998, affecting supporters of different teams during the world Football Cup, and the second one followed the opening of the Georges Pompidou Hospital in Paris in 2000. The Ministry of Health, following the ad'hoc working group proposals, took the decision in the early 2000s to base the water regulations within buildings on Legionella pneumophila. During the same period, the Ministry of Environment based Cooling Towers (CT) monitoring on Legionella species. This astonishing dichotomy was lasted a decade until a new decision to base the control of CTs on L. pneumophila was made in 2013. This note written by two members of the different working groups involved since the beginning in the "saga" of Legionellosis control in France, attempts to explain how and when different administrative decisions were put into force, decisions which were not always based only on scientific grounds.

After the occurrence of the 1998 outbreak of around twenty Legionella pneumophila cases affecting supporters of different European teams who spent time in Paris during the final rounds of the World Football Cup, a retrospective epidemiological study located the source of contamination in the center of Paris. After large sampling, a Cooling Tower installed in a building near the Opera was identified as the source of this outbreak. On April 26, 1999, the Prefect of Paris issued a prefectural order prescribing CTs control requirements. One of the authors of this note was part of the working group consulted by the Prefecture and at the time he recommended routine CTs testing with the aid of Legionella pneumophila culture, because of epidemiological reasons. However, the prefectural authorities, after hearing from the managers of CTs, considered that testing for L. pneumophila would pose difficulties for those responsible for the CTs given available testing techniques and decided, based on nonscientific ground, that testing only for Legionella species would be sufficient. The draft of this local document was sent to the Ministry of Environment which quickly

decided to publish a circular to the French Prefects for adding these prescriptions to the prefectural decrees related to the CTs in France.

The Ministry of Health, during the same period, issued technical documents related to the survey and control of Legionella pneumophila by culture method for water within public buildings, including hospitals, with a three stages approach (target, alert and unacceptable levels).

The first « scientifically sound » official text on risk management related to Legionella, was published in 2001 by the « Conseil Supérieur d'Hygiène Publique de France » (Health Ministry) [1]. This report was prepared by a working group of the CSHPF. Since the publication of this document in 2001, all regulations issued by the Ministry of Health have been based on surveys of Legionella pneumophila, with indicative levels based on the enumeration of this bacteria with the aid of a culture methodology. This approach was chosen in 2002 for the interior networks of buildings and became mandatory for hospitals in 2005 [2].

After the largest Legionellosis outbreak experienced in France in Harnes (Pas de Calais, 2003/2004), the Environment ministerial order repeated the previous requirements without consulting outside experts, even the epidemic strain of Legionella pneumophila was present both in the aerated pond and CTs of the source of dissemination.

The second very important text for France is the ANSES report, published in April 2011 "On methods of detection and enumeration of Legionella in water" [3]. This report recommends testing for Legionella pneumophila also in CTs (culture and q-pcr). The Ministry of Environment relied on this report and on the expert working group to amend in 2013, on scientific bases, the previous Ministerial Order, from monitoring for Legionella species to monitoring for Legionella pneumophila [4]. This regulation requiring regular testing of CTs for L. pneumophila has been very effective and remains in vigor for cooling towers in France today. This applies for the two categories of CTs (authorization if > 3,000 kw, declaration if <3,000 kw).

In France *Legionella* species count by culture is now only requested in water samples of the most at-risk wards in healthcare settings but no more for CT fluids. This parameter may only be used for routine internal testing with the aid of q-pcr methods, without adding an excessive cost. Thus, from 1999 to 2013, CTs were in the spotlight and regulatory texts were tightened. It is important to underline the stabilisation of the detected Legionellosis cases during the past decade when an increase is still noticeable in many other countries. Outbreaks were no more detected, illustrating the efficacy of collective preventive measures. The actual cases are more linked to individual sources of contamination. Thus, French regulations need to be further strengthened, particularly for housing and private facilities which are not currently subject to any routine control.

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