

8th International Conference on

Epidemiology & Public Health

September 17-19, 2020 | Rome, Italy

Waterborne disease outbreak surveillance system in France: Perspectives for nationwide surveillance

Damien Mouly, Clément Vix and Jérôme Pouey
French National Public Health Agency, France

Outbreaks of infectious waterborne diseases are still a public health concern in developed countries [1-6]. France is also concerned by WBDO occurrence [7, 8], but to date, because of the absence of a nationwide specific surveillance system, the detection of these events is mainly based on the voluntary reporting of clusters of AGI by general practitioners to health authorities. The number of WBDO is thus most likely underestimated. In this context, an integrated approach to detect WBDO relying on the identification of medicalized AGI cases from the French health administrative database and drinking water networks (DWN) from French ministry of health database was developed [9] and tested in a pilot study. Each detected outbreak was investigated regarding environmental criteria during the days before the onset of the outbreak: results on bacterial water monitoring, weather (e.g. heavy rain), technical incidents in the drinking water system (e.g. chlorination breakdown, alarm malfunction). Sixty-seven potential WBDO were detected in 2014 and 2015 in the 7 french administrative districts of the pilot study. The combined population served by a DWN implicated in a WBO during the period was 914,599 inhabitants. Comparatively, only 2 WBDO had been detected and reported to the health authorities at the time of their occurrence. Four levels of strength of association have been defined based on epidemiological and environmental criteria: Strong, probable, possible and undetermined. The results of the pilot study highlight the public health utility of the implementation of a nationwide WBDO surveillance system in France based on data routinely collected by the Health Insurance. A web-application, named “EpiGEH”, was also developed to support the surveillance system. Such a specific surveillance system should help health authorities to formulate recommendations regarding the management of drinking water systems and propose appropriate preventive measures, in accordance with the water safety plans.

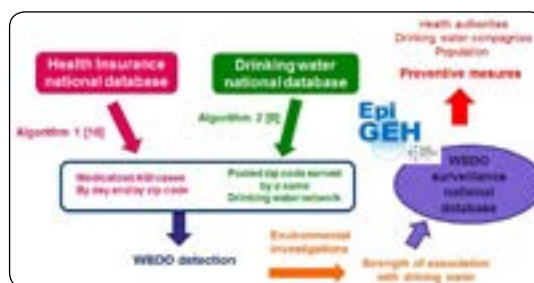


Figure: Waterborne disease outbreak surveillance system

Recent Publications

1. Craun, G.F., et al., Causes of outbreaks associated with drinking water in the United States from 1971 to 2006. *Clin Microbiol Rev*, 2010. 23(3): p. 507-28.
2. Hrudey, S.E. and E.J. Hrudey, *Safe Drinking Water : Lessons from Recent Outbreaks in Affluent Nations*. 2004, London: IWA publishing. 486.
3. Pons, W., et al., A Systematic Review of Waterborne Disease Outbreaks Associated with Small Non-Community Drinking Water Systems in Canada and the United States. *PLoS One*, 2015. 10(10): p. e0141646.
4. Nazareth, B., et al., Surveillance of waterborne disease in England and Wales. *Commun Dis Rep CDR Rev*, 1994. 4(8): p. R93-5.
5. Murphy, H.M., et al., A systematic review of waterborne disease burden methodologies from developed countries. *J Water Health*, 2014. 12(4): p. 634-55.
6. Guzman-Herrador, B., et al., Waterborne outbreaks in the Nordic countries, 1998 to 2012. *Euro Surveill*, 2015. 20(24).