

LCQ8: Monitoring the water quality of fountains

Following is a question by Dr the Hon Pierre Chan and a written reply by the Secretary for Home Affairs, Mr Lau Kong-wah, in the Legislative Council today (February 20):

Question:

Last year saw over 100 reported cases of Legionnaires' disease in Hong Kong, and that number was higher than the annual average of some 70 cases for the past five years. Legionella bacteria grow well in warm water between 20 and 45 degrees Celsius and may be found in water bodies in cooling towers, fountains, etc. It has been reported that in December last year, two residents of a private housing estate developed, after having been infected with Legionnaires' disease, the complications of pneumonia and were in a critical condition, and there is a fountain at the entrance of the housing estate. Regarding the monitoring of the water quality of fountains, will the Government inform this Council:

(1) given that there were 77 fountains managed by the Leisure and Cultural Services Department (LCSD) as at November last year, of the following details of each of the fountains: (i) address, (ii) year of completion, (iii) whether the construction contract provided that the contractor had to comply with the Code of Practice for Prevention of Legionnaires' Disease when designing and constructing the fountain, and (iv) the government department responsible for monitoring the design and construction of the fountain (set out one by one in the table below);

	(i)	(ii)	(iii)	(iv)
1.				
2.				
...				
77.				

(2) of the following details of the repair, maintenance and cleaning work in respect of the fountains mentioned in (1): (i) the number of times for which the fountains were completely drained and cleaned in 2016-2017, (ii) the number of reports and follow-up requests concerning the problems found in the fountains made by the management departments to the works departments in 2016-2017, and (iii) whether the fountains are now in operation (set out one by one by address of the fountains in the table below);

Address of fountain	(i)	(ii)	(iii)
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1.				
2.				
...				
77.				

(3) given that upon completion of the construction works for the music fountains at Kwun Tong Promenade, the Architectural Services Department (ArchSD) will conduct water tests for the fountains in accordance with the standards stipulated in the Swimming Pools Regulation (Cap 132CA), whether such tests are one-off in nature, and whether ArchSD will conduct similar water tests for newly built fountains in future;

(4) given that LCSD regularly takes water samples at its public swimming pools for water quality examination, why LCSD does not do the same for the fountains under its management;

(5) given that the Food and Environmental Hygiene Department licenses and monitors private swimming pools in accordance with the Swimming Pools Regulation, whether the Government will establish a similar licensing and regulatory regime for private fountains; if not, of the reasons for that; and

(6) whether it knows the current number and addresses of the private fountains in Hong Kong, and of the government department responsible for monitoring the water quality of such fountains?

Reply:

President,

The Government is very concerned about the cases of community-acquired Legionnaires' disease (LD). Regarding a cluster of LD cases that involved three patients in December last year, the Centre for Health Protection of the Department of Health commenced epidemiological investigation and the laboratory testing results revealed that all water samples and environmental samples were tested negative for Legionella pneumophila serogroup one. As legionellae may be found in various environmental settings and aqueous environments, the sources of infection of the cases are yet to be ascertained.

After consultation with relevant departments, my reply to Dr the Hon Pierre Chan's question is as follows:

There are 80 water fountains in the leisure and cultural venues of the Leisure and Cultural Services Department (LCSD). Water emitted from water fountains is normally reused after collection, filtration and disinfection. Works department is responsible for the design and construction of the fountains. The fountains are normally installed with recirculatory filtration and disinfection facilities to remove sediments, dirt and debris in water so as to control the microbial growth and to disinfect the fountain water. LCSD and the works departments will comply with the guidelines in the Code of Practice for Prevention of Legionnaires' Disease (the Code of

Practice) compiled by the Prevention of Legionnaires' Disease Committee to properly design, operate, repair, maintain and manage the fountains so as to prevent the transmission of legionella. Upon completion of new projects, the contractors are required to conduct fountain water tests to ensure that the water quality meets the relevant standards and contractual requirements.

On day-to-day management, LCSD will make reference to the recommendations in the Code of Practice and carry out day-to-day cleansing and maintenance of water fountains taking into account the size of the water fountains, their designs, the manufacturers' guidelines, etc. The measures include draining fountain water for regular cleansing so as to effectively eliminate the risks of bacteria growth and transmission. Generally speaking, draining of water for cleansing is carried out at least once a month for about 80 per cent of LCSD's fountains. For the remaining water fountains, draining of water for cleansing is carried out at least once every six months taking into account the manufacturers' guidelines and operational needs. In case the venue management identifies any defects in the water fountains, they will report to the works departments responsible for maintenance (e.g. the Electrical and Mechanical Services Department (EMSD)) for follow-up. The relevant works departments will also conduct regular inspections of the facilities concerned to ensure that they function properly.

According to the Code of Practice, while the cooling tower management is required to arrange for regular collection of water samples from cooling towers for testing (including testing for legionella), regular collection of water samples from venue facilities (including fountains) in the community environment for testing is not required.

Information regarding the water fountains in LCSD's venues is set out at Annex.

The Music Fountains at Kwun Tong Promenade will be provided with recirculatory filtration and disinfection facilities. To prevent the transmission of LD through fountain water, the precautionary measures stipulated in the Code of Practice, including those on design, operation, repair and maintenance, will be adopted in the construction works. Upon completion of the construction works of the Music Fountains, the Architectural Services Department (ArchSD) will conduct water tests by making reference to the hygiene standards for swimming pool water quality so as to ensure that the fountain water quality meets the hygiene requirements. As for other new water fountains works designed and constructed by ArchSD, the contractors are required to conduct fountain water tests upon completion of the construction works to ensure that the water quality meets the relevant standards and contractual requirements. Upon commissioning of the fountains, regular cleansing of fountain water will be carried out by LCSD and inspections of the facilities concerned by the maintenance department will be arranged as per current arrangement.

As LCSD is not responsible for licensing and regulation of private swimming pools and water fountains, no relevant information is available.

Proper design, operation and maintenance of water systems are important to prevent proliferation of legionella. The Code of Practice and associated pamphlets provide practical guidelines for the building owners and associated practitioners on the proper design, operation and maintenance of building facilities (including water fountains) for prevention of LD. Besides, EMSD often disseminates good practices to practitioners in the industry through briefings, seminars and correspondences for minimisation of the risk of LD.