

LCQ19: Lifesaving services at swimming pools

Following is a question by the Hon Kenneth Fok and a written reply by the Secretary for Culture, Sports and Tourism, Miss Rosanna Law, in the Legislative Council today (February 12):

Question:

It is learnt that the Leisure and Cultural Services Department has installed artificial intelligence (AI) drowning detection systems developed by the University of Hong Kong and France at the Kwun Tong Swimming Pool and the Sun Yat Sen Memorial Park Swimming Pool respectively to help strengthen lifesaving services at public swimming pools. In this connection, will the Government inform this Council:

(1) whether the Government has examined the manpower and financial expenditure (including acquisition costs, installation costs and system maintenance fees) involved since the commissioning of the aforesaid two AI systems and reviewed their effectiveness; if so, of the details; if not, whether it will expeditiously commence the relevant work before the summer swimming season;

(2) whether the Government has assessed and compared the actual operation of the aforesaid two systems, including their effectiveness, accuracy, ease of operation and interface with lifeguards and lifesaving mechanisms at swimming pools, with a view to providing a reference point for the retrofitting of such systems at more public swimming pools in the future; if so, of the details; if not, the reasons for that; and

(3) given that according to a report released by the Office of The Ombudsman in March last year on its direct investigation into the regulation of licensed swimming pools by the Food and Environmental Hygiene Department (FEHD), the FEHD has not put in place an accident notification mechanism for licensed swimming pools, whether the Government will consider mandating private swimming pools to install AI drowning detection systems and establish a real-time notification mechanism to ensure that the FEHD and the relevant government departments can be expeditiously informed of drowning incidents, thereby enhancing regulatory efforts on private swimming pools; if so, of the details; if not, the reasons for that?

Reply:

President,

Having consulted relevant government departments, my reply to the questions raised by the Hon Kenneth Fok is as follows:

(1) The Leisure and Cultural Services Department (LCSD) has all along prioritised the safety of swimmers in both the facilities as well as the operation of its venues. Apart from providing sufficient lifeguards, the LCSD has put on trial two different sets of artificial intelligence (AI) drowning detection systems at Kwun Tong Swimming Pool and Sun Yat Sen Memorial Park Swimming Pool respectively to assist lifeguards in monitoring the real-time condition of swimmers and locating drowning victims promptly with a view to further strengthening life-saving services.

The AI drowning detection system developed by the University of Hong Kong Sport AI Laboratory has been on trial at the outdoor secondary pool of Kwun Tong Swimming Pool since August 2023. Through AI detection technology, the system analyses the videos and images captured by cameras installed underwater and calculates the drowning probability of swimmers. If suspected drowning is detected, the system will alert the lifeguards to carry out a rescue. The system was developed with a grant of around \$900,000 by the Innovation, Technology and Industry Bureau. The LCSD has subsequently installed additional sets of underwater detection devices and upgraded the existing sets of underwater cameras in the secondary pool. The project cost was around \$700,000, with an estimated annual expenditure on system maintenance of around \$130,000.

The AI drowning detection system developed by a French company was installed at the indoor main pool and training pool of Sun Yat Sen Memorial Park Swimming Pool in September 2024. The system uses cameras installed above the pools to capture images and performs comprehensive tracking and analysis of swimmers' motions. If a swimmer is found to remain stationary for over 10 seconds, the system will consider it a case of suspected drowning, trigger the alarm and display the drowning location for lifeguards to carry out a rescue. Relevant installation cost of the system was about \$7.9 million, with an annual maintenance cost of approximately \$1.1 million. In addition, equipment and devices of the system require a comprehensive inspection every three years to ensure its stability and safety. The estimated cost of such inspection is around \$500,000.

(2) At present, the two detection systems mentioned above are still in trial phase. The LCSD needs to adjust the systems from time to time based on the actual environment and usage, and observe the operation of the systems in different seasons so as to ensure the stability and reliability of the data collected. Hence, a comprehensive set of data for assessment has yet to be available. Upon completion of tests and data analyses in different seasons, the LCSD will review and compare the cost-effectiveness of the two systems before deciding whether to extend the application of the systems to other public swimming pools.

(3) To strengthen the regulation of licensed swimming pools, the Food and Environmental Hygiene Department (FEHD) has, in response to the recommendations of the Office of the Ombudsman, established a notification mechanism for fatal drowning cases in licensed swimming pools. In May 2024, the FEHD issued a letter to swimming pool licensees imposing new licensing conditions which require the reporting of cases involving casualties within a

prescribed period. The FEHD officers will conduct site inspections for fatal drowning cases to ascertain whether the swimming pools concerned have provided sufficient life-saving attendants and appropriate life-saving equipment as required by the law and the licensing conditions. The FEHD will also examine the relevant cases and require the licensed swimming pools to take additional measures to further protect the safety of swimmers as necessary.

The FEHD and the LCSD share experience and exchange information from time to time on the regulation and management of swimming pools, including the application of technology to enhance swimmers' safety. As the AI drowning detection system is still in the trial stage, the FEHD will maintain contact with the LCSD to understand the application of the system.