Annex

Application of QMRA in Singapore's context

Leveraging on the concepts embedded in QMRA, PUB has established robust treatment processes and a comprehensive water quality surveillance programme to ensure that Singapore's drinking water consistently meets both local drinking water regulations, as well as international drinking water standards and guidelines. Today, the approach has evolved from a reactive "end-of-pipe testing" to a "process monitoring" approach, one that is more proactive in identifying potential risks within the treatment process.

QMRA also enables PUB to evaluate and compare the effectiveness of different treatment technologies in managing microbial risks. This allows for informed, evidence-based decisions when selecting suitable technology for Singapore's water sources, further strengthening the safety and reliability of our water supply. For instance, Singapore has adopted new and advanced technologies for water treatment, such as:

(i) reverse osmosis for removal of dissolved ions and particles, including viruses, which are too small to be removed through normal filtration; and
(ii) ultraviolet disinfection and ozonation for disinfection of a broader range of waterborne pathogens.