

Havelock North

The way forward

International evidence can help provide lessons from last year's water contamination at Havelock North, says **John Pfahlert**.

Individual biases about water disinfection and treatment should not be allowed to endanger innocent consumers, especially when such biases are based on urban myths and are not founded on authentic public health evidence.

These are the words of world-leading water contamination expert Steve Hrudehy who's visiting New Zealand in September to take part in the Water New Zealand Drinking Water Workshop.

As well as his international expertise, Steve has a deep understanding of the Havelock North contamination event. He has prepared a 50-page analysis on behalf of Water New Zealand making up part of our submission into the government inquiry's second stage.

The Havelock North water contamination inquiry identified a number of failings in the way that drinking water had been managed leading to the contamination outbreak and raising questions about the safety and security of our drinking water in general.

Those findings set the scene for the inquiry's second stage – an investigation into the systemic issues and existing statutory and regulatory regimes involved in delivering drinking water to see if improvements can be made. Stage one came up with more than 158 questions around 24 major issues to be addressed in stage two.

The Havelock North contamination has much in common with similar outbreaks that have occurred in other parts of the world. It's with this in mind that Water New Zealand will bring together

a group of international experts in a one day workshop on September 19, ahead of our 2017 Conference and Expo.

We're looking to share some of the lessons learnt from around the world – particularly around water safety planning and water sanitation planning.

Steve, a professor at the University of Alberta, is the co-author of *Safe Drinking Water – Lessons from Recent Outbreaks in Affluent Countries*. He has worked with the Australian National Health and Medical Research Council working group to develop a Framework for the Management of Drinking Water Quality.

And he served on the Research Advisory Panel to the Canadian Walkerton Inquiry from 2000 to 2002. The Walkerton contamination resulted in seven fatalities and 2300 cases of illness because livestock manure carrying *E. coli* and campylobacter contaminated the groundwater supply.

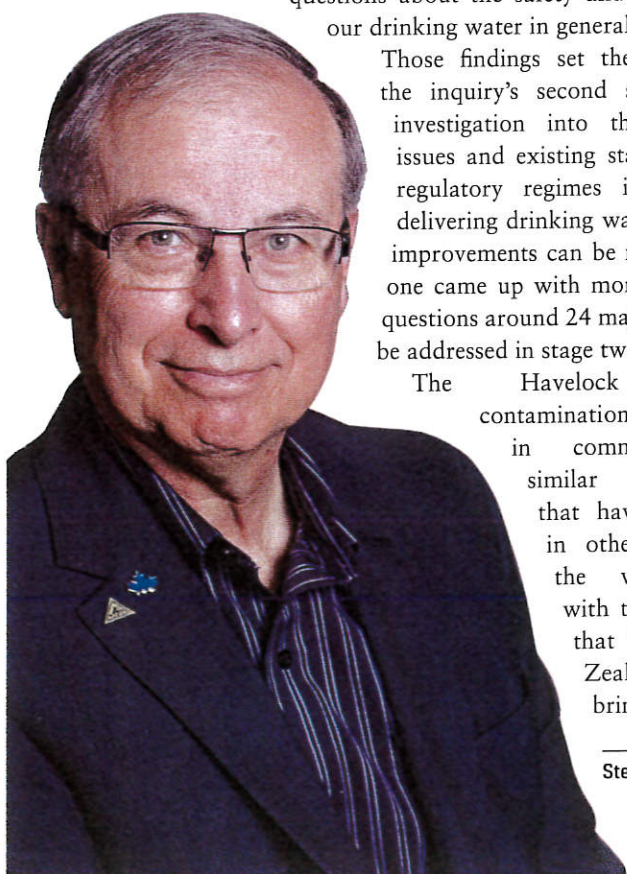
Steve says the common theme across all of the international outbreak evidence is complacency. Many affluent societies have known for many decades how to prevent outbreaks. Yet people continue to allow them to happen by failing to do what they know needs to be done.

Steve bases his evidence around the findings of 38 outbreaks of serious drinking waterborne disease in 13 affluent countries. In total they accounted for 77 fatalities and more than 460,000 cases of gastrointestinal illness.

All of these outbreaks were preventable if the threat posed by microbial pathogens in drinking water had been recognised and suitable preventive measures had been implemented and consistently maintained.

The 38 case studies were chosen on the basis of relevance to the provision of safe drinking water anywhere in New Zealand, a country with substantial agricultural activity, generally low population density and many small- to medium-sized communities.

His review of international experience is organised according to a number of well-established principles for ensuring safe drinking water that were first developed in 2001 at an expert meeting in Australia between the World Health Organisation microbial pathogens expert group and the National Health and Medical Research Council of Australia working group on revising the Australian Drinking Water Guidelines.



Steve Hrudehy.

Steve used these principles for the Havelock North submission because he says they have stood the test of time and continuing experience.

The first, and by far the most important, of these principles is that pathogenic microorganisms pose the greatest risks to consumers of drinking water. Protection of water sources and treatment are of paramount importance and must never be compromised.

Unfortunately, this principle was not embraced in Havelock North.

According to Steve, there was remarkable urgency to cease chlorination after the “minimum time allowed for attaining clear results after the 2015 *E. coli* contamination incident” with “no apparent urgency in obtaining results for an investigation to explain what had caused the microbiological contamination in the first place”.

He says it appears that chlorination was seen as a greater concern than microbial contamination. If chlorination is regarded as untenable for consumers, for whatever reasons, water purveyors and public health officials are obliged to require investment in alternative disinfection technologies with all of the attendant costs, treatment and reticulation system maintenance obligations that may be associated with those technologies.

His report says that the Havelock North outbreak was severe in its consequences. But the vulnerability that allowed it to occur could have resulted in an even more severe outcome.

In particular, if livestock faecal contamination had included the pathogen *E. coli* O157:H7 – the pathogenic strain of *E. coli* that was involved in the fatal Walkerton outbreak and in fatal outbreaks in Cabool (USA), Saitama (Japan) and Washington County (USA) – fatalities among young children could have occurred in Havelock North.

Water safety plan

International best practice for achieving risk management has been developed around the water safety plan approach. But Steve says that approach – which is intended to be inherently preventive – can only be as effective as the care and commitment

invested in preparing and continuously updating it allows.

“A water safety plan must be conscientiously developed and truly owned by those who must use it, not by an external third party. If a water safety plan is not owned by those running the water system it may become just another document taking up space on an office shelf.

“Systemic problems that are evident in many of the international outbreaks reviewed, and are certainly evident in North Havelock and likely elsewhere in New Zealand, are the resource limitations and inadequate capabilities of small water purveyors,” he says.

“Allowing a fragmented system of drinking water supply by many small jurisdictions is a common problem worldwide that inevitably contributes to vulnerability for contamination.

“Some jurisdictions including England and the states of South Australia, Victoria and Western Australia, have addressed this risk by creating larger, capable, regional or state-wide water authorities to provide the critical mass of expertise for ensuring safe drinking water.”

He says such measures are politically difficult to implement but can be remarkably effective.

“Ultimately, a drinking water purveyor can only be relied upon to consistently provide safe drinking water if those responsible for delivering public drinking water take personal ownership of the considerable public health responsibility that providing drinking water entails. There should be no room for complacency among those who must accept this responsibility.”

Steve draws an analogy with recurring outbreaks of communicable diseases like measles and mumps that occur because of a failure to maintain adequate immunisation. These, he says, reveal the inevitable tension between individual rights and societal benefit. In the case of drinking water, he says ill-informed biases about water disinfection and treatment should not be allowed to endanger the wider population. **LG**

- John Pfahlert is the chief executive of Water New Zealand. ceo@waternz.org.nz

BROOKFIELDS LAWYERS

When you need public sector expertise, Brookfields is the firm you want on your side.

www.brookfields.nz

NAVIGATING YOUR SUCCESS

CONTACTS:

AUCKLAND Ph: 09 379 9350

WELLINGTON Ph: 04 499 9824

Melinda Dickey
Andrew Green
Linda O'Reilly
John Young
Matthew Allan

Andrew Cameron