Access to safe drinking-water

This factsheet presents statistics on the population who have access to safe drinking-water in New Zealand. Access to safe drinking water is measured by access to bacteriological, protozoal and chemical compliant water. Boil-water notices may be issued to residents if there is a risk of microbial contamination in drinking water.

Key facts

About 83% of New Zealanders (4.1 million) received water from registered drinking-water supplies.

76% of New Zealanders (3.1 million) on registered supplies received drinking water that met all bacteriological, protozoal and chemical requirements.

Small drinking-water supplies were less likely to meet protozoal and bacteriological standards than larger supplies.

32 supplies issued permanent boil-water notices during the 2018–2019 reporting period, affecting 9,073 people.

Background information

Safe drinking-water is vital for human health. Drinking-water that is not safe may contain disease-causing pathogens or chemicals. Safe source selection and treatment of drinking-water supplies can ensure the water is safe to drink.

Registered drinking water supplies in New Zealand must be regularly tested for microbiological and chemical compliance with the *Drinking-water Standards for New Zealand* (the Standards). These Standards set maximum acceptable values (MAVs) to protect human health.

Whether or not a drinking water supply complies with the prescribed quality standards is based on three measures (Ministry of Health 2020):

- monitoring of *E.coli* is used to determine **bacteriological** compliance
- whether treatment processes result in an acceptable level of inactivation/removal of protozoa, determines **protozoal** compliance
- If chemical hazards are identified; monitoring of these **chemicals** to determine compliance

A boil-water notice may be issued to residents by a supplier if there is a heightened risk of microbial contamination. This indicates tap water may not be safe to drink or use to prepare food and brush teeth, and so residents must boil water before consuming it. Temporary boil-water notices are issued to protect public health if there is a short-term heightened risk of microbial contamination, as can happen following extreme weather events. Permanent boil water notices indicate there is a longstanding heightened risk of microbial contamination.

About three quarters of New Zealanders on registered supplies received drinking-water that met all the requirements of the Standards

About 4.1 million New Zealanders (83%) were served water from registered drinking-water supplies during the 2018–2019 reporting period. The remainder of the population received drinking-water from very small community supplies and self-supplies e.g. rainwater tanks.

Of the population on registered supplies, 95% (3.9 million) were served with bacteriological-compliant drinking-water, 79% (3.2 million) with protozoal-compliant drinking-water, and 98% with chemically compliant drinking-water (4 million). About 76% (3.1 million) received drinking-water that met all three requirements (Table 1).

Table 1: Population on registered community drinking-water supplies that had access to safe drinking water, 2018–2019

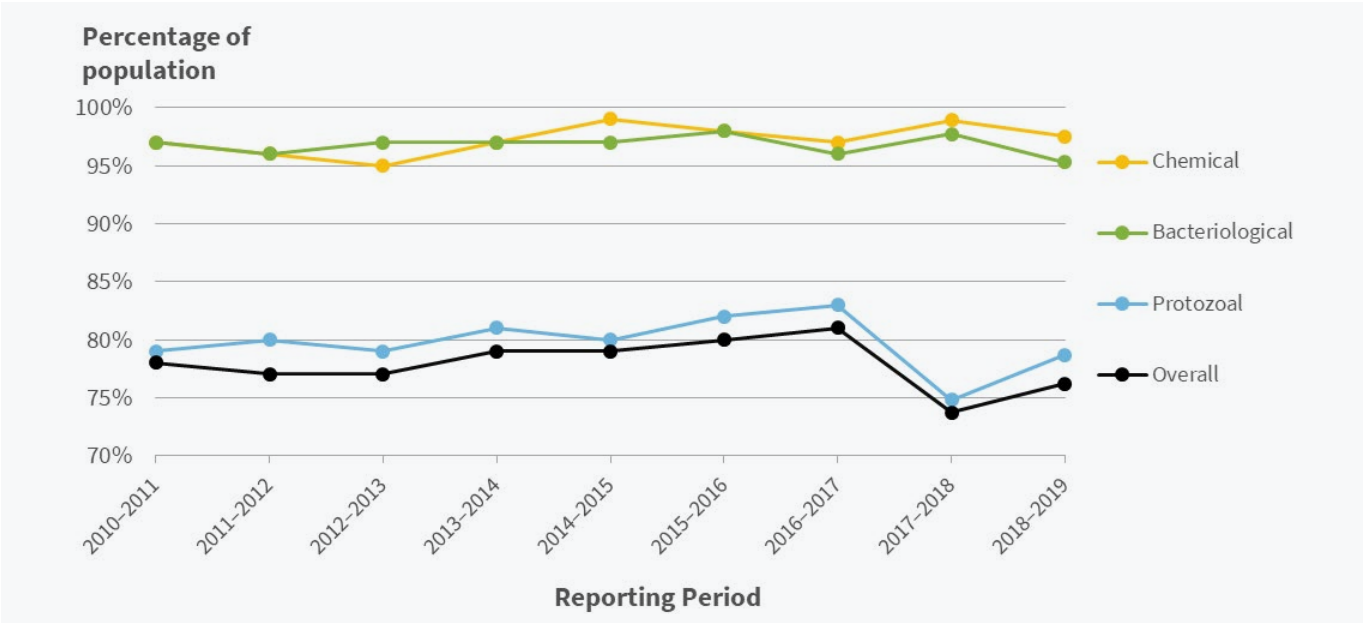
Access to safe drinking-water	Estimated population	Percent
Bacteriological compliance	3,885,000	95.3
Protozoal compliance	3,209,000	78.7
Chemical compliance	3,975,000	97.5
Overall compliance	**3,107,000**	**76.2**

Source: Ministry of Health 2020.

Chemical and bacteriological compliance has remained at or above 95% from the 2010–2011 reporting period onwards. Protozoal compliance was highest (83%) in 2016–2017, before dropping to its lowest (75%) in 2017–2018.

Overall compliance in 2018–2019 improved from the previous reporting period, however, it remained lower than its peak (81%) in 2016–2017 (Figure 1).

Figure 1: Percentage of population on registered community drinking water supplies with access to safe drinking water, 2010–2019



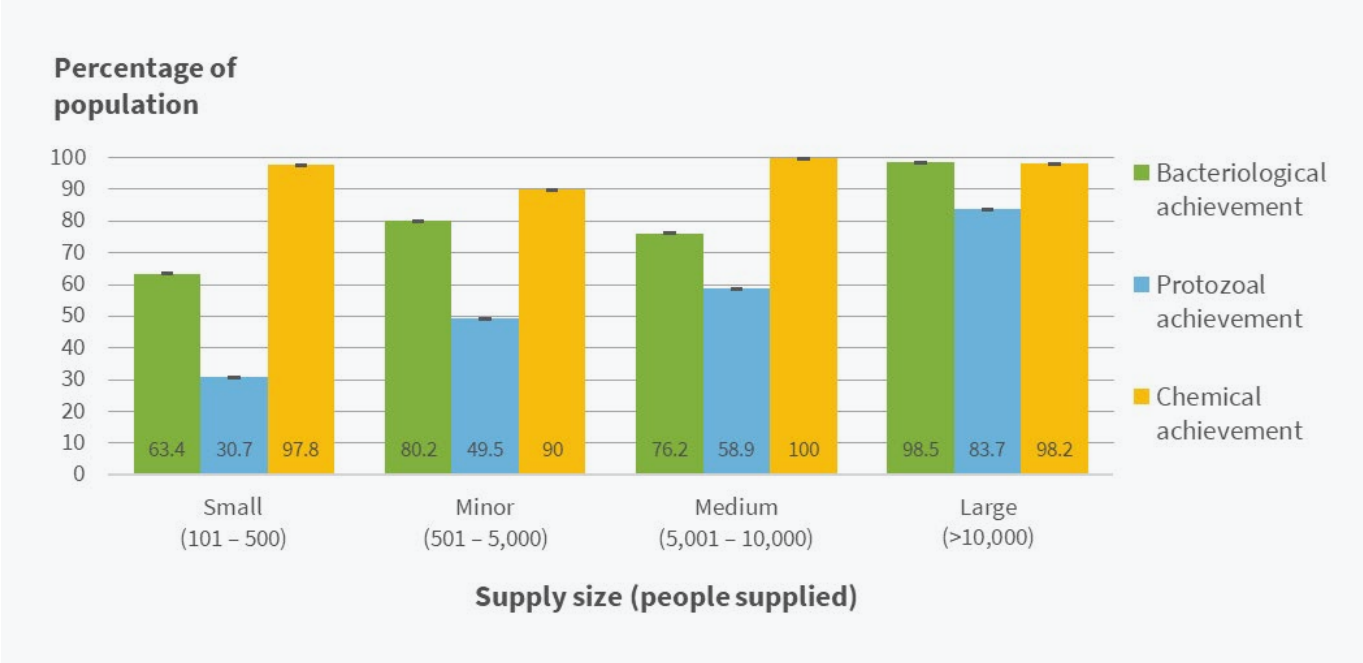
Note: Tighter requirements for monitoring came into effect from 1 August 2019. However, these changes will affect the coming reporting period (i.e. 2020–21) (Ministry of Health 2020).
Source: Ministry of Health 2020.

Small drinking water supplies less likely to meet protozoal and bacteriological standards compared to large supplies

Sixty-three percent of the population who were served by small drinking water supplies received water that met the bacteriological standards, compared to 98.5% of the population who were served by large supplies. Protozoal compliance also increased with supply size from 30.7% for small supplies to 83.7% for large supplies. Chemical compliance was ≥ 90% across all supply sizes (Figure 2).

It is likely that compliance costs per capita are higher for smaller supplies compared to larger supplies (Ministry of Health 2020). Small supplies tend to be in rural areas, while the largest supplies tend to serve New Zealand's largest cities.

Figure 2: Percentage of population with access to bacteriological compliant drinking water by territorial authority, 2018–2019

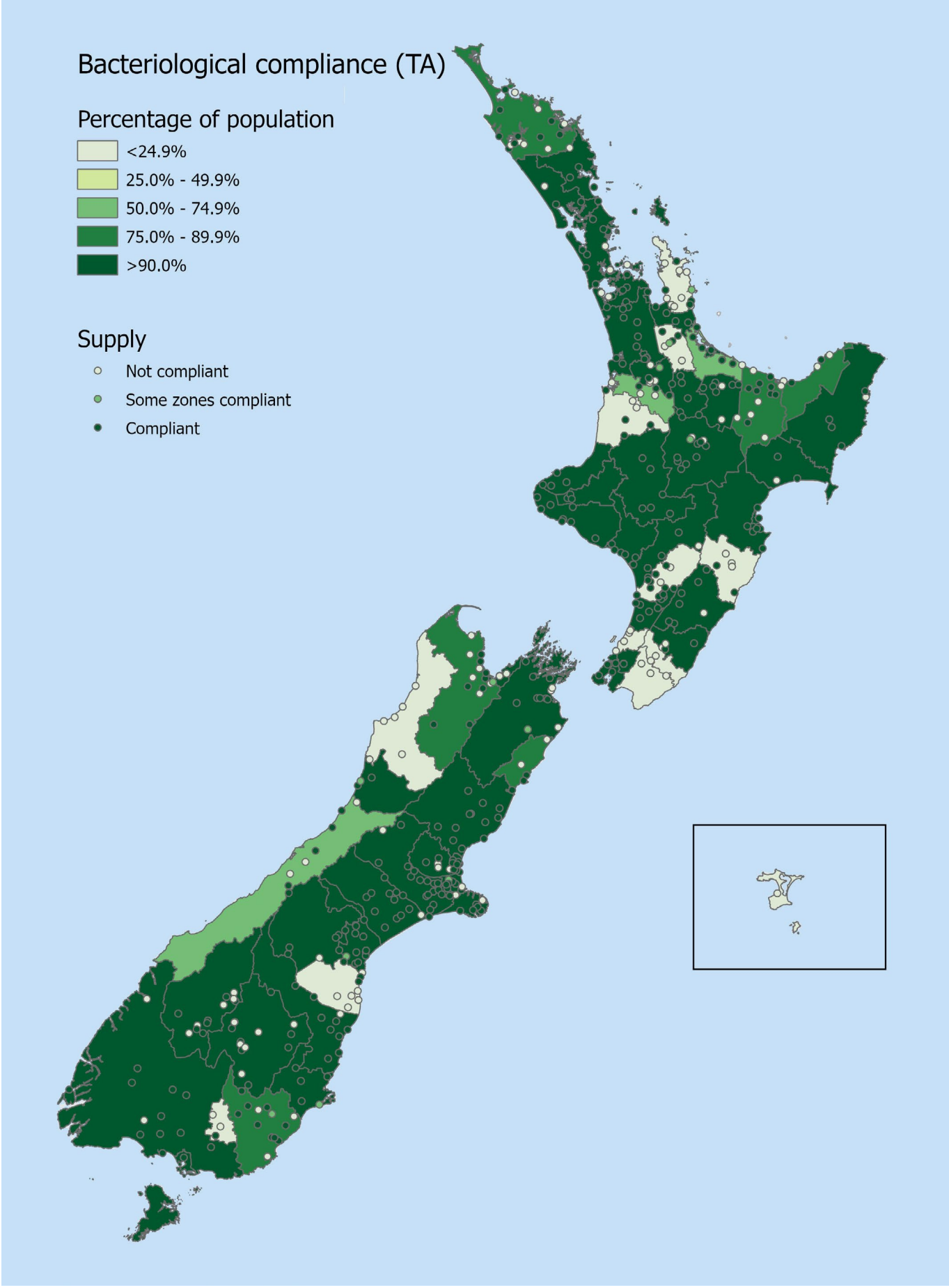


Source: Ministry of Health 2020.

People in the North Island were more likely to be supplied with protozoal-compliant drinking water than those in the South Island

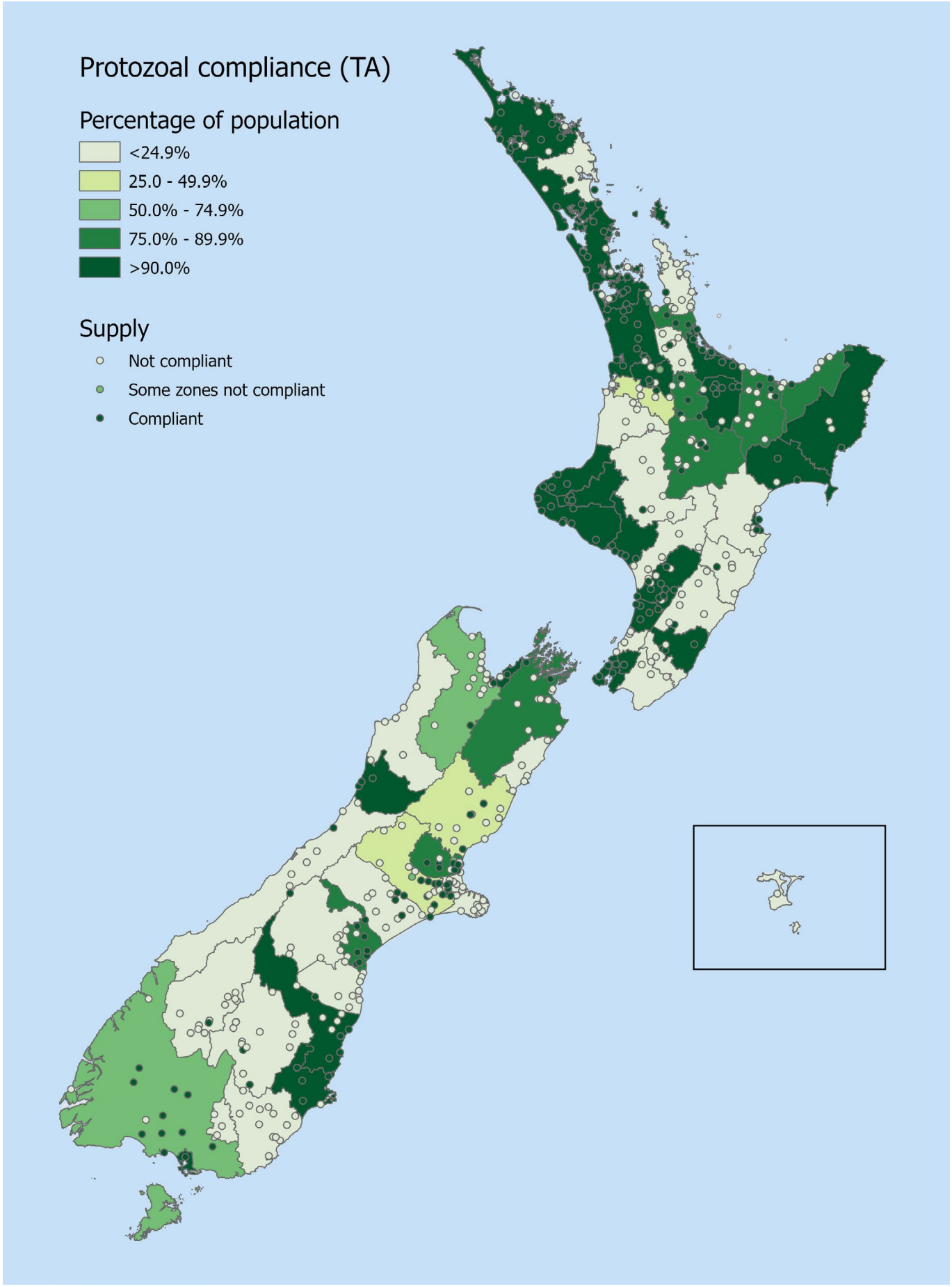
Bacteriological compliance was low for some supplies, mostly outside of the major urban areas (Figure 3). Protozoal compliance was low for supplies located in rural areas, particularly in the South Island (Figure 4). Chemical compliance was lowest near the Taupo Volcanic Zone (Figure 5). The most common determinand in this area was arsenic, for which the MAV was exceeded in 7 supplies, affecting 9,101 people. Arsenic can occur from natural geologic sources and is associated with elevated risk of some cancers (Smith et al 1998). Elsewhere, disinfection by-products (13 supplies; 72,151 people) and fluoride (4 supplies; 19,644 people) were the most common determinands associated with failure to meet the chemical standards. These failures include exceedances of the MAV and monitoring issues.

Figure 3: Percentage of population with access to bacteriological–compliant drinking water by territorial authority and supply, 2018–2019



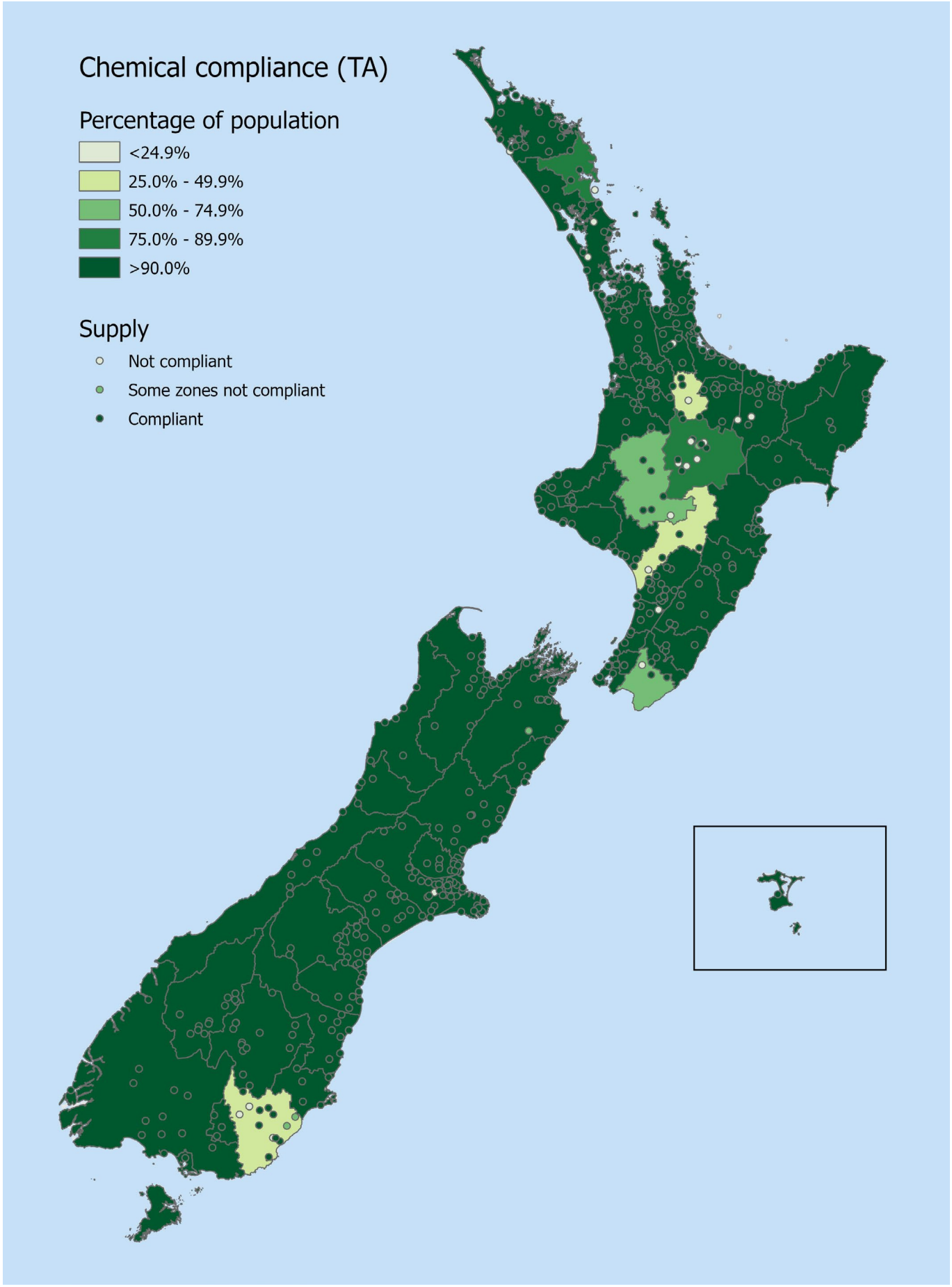
Source: Ministry of Health 2020.

Figure 4: Percentage of population with access to protozoal–compliant drinking water by territorial authority and supply, 2018–2019



Source: Ministry of Health 2020.

Figure 5: Percentage of population with access to chemically compliant drinking water by territorial authority and supply, 2018–2019

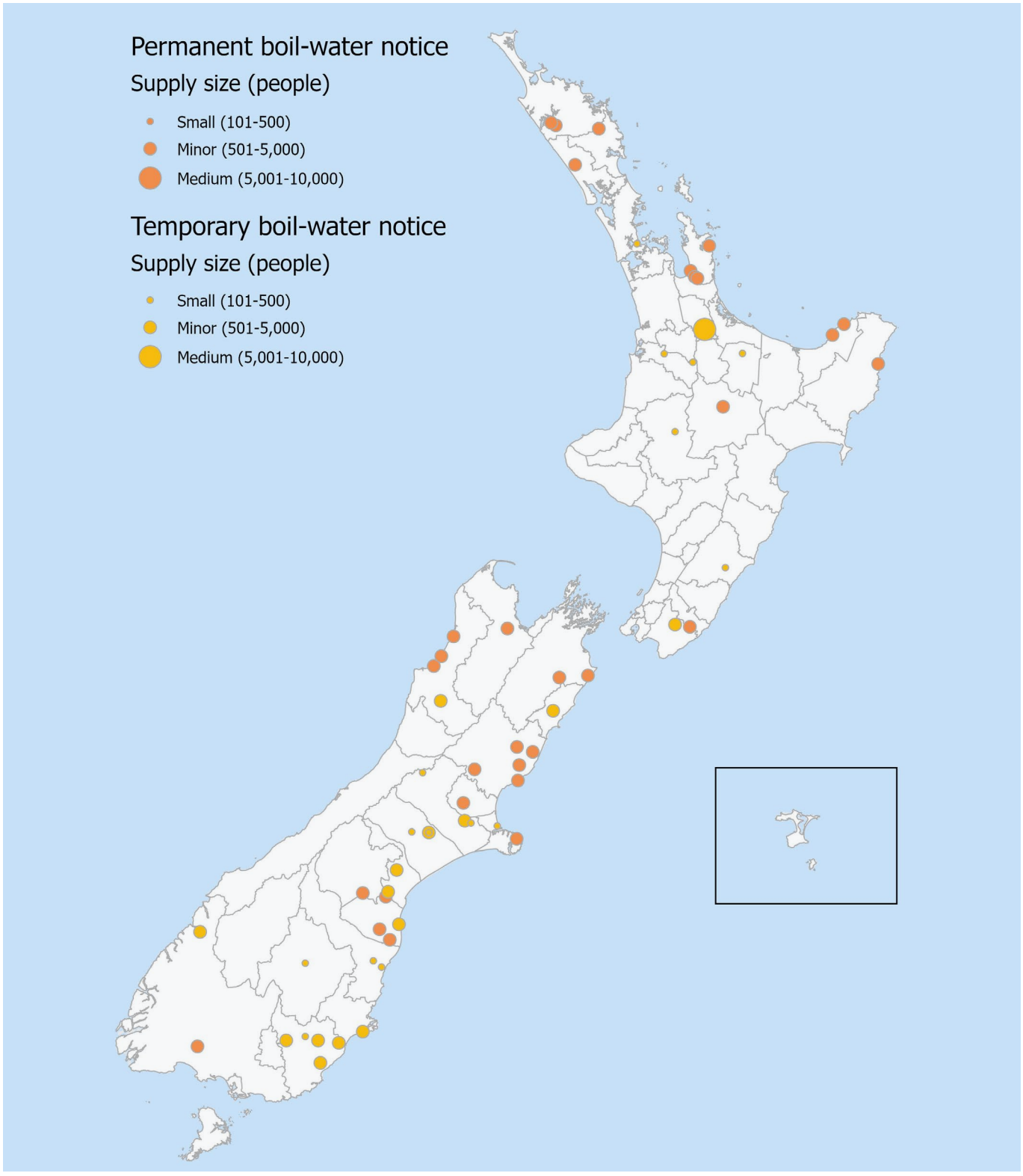


Source: Ministry of Health 2020.

Boil water notices

62 supplies issued a boil-water notice during the reporting period affecting 40,167 people (1 in 100 people on registered water supplies). This comprised 30 temporary boil-water notices (31,094 people) and 32 permanent boil-water notices (9,073 people). The largest supply with a permanent boil-water notice was Awatere, Marlborough (1,333 people).

Figure 6: Supplies that issued permanent or temporary boil–water notices during the 2018–2019 reporting period, by size



Source: Ministry of Health 2020.

Data for this indicator

The datasets for this indicator come from the Ministry of Health Annual on drinking-water quality reports. Drinking-water statistics are presented for all registered community drinking-water supplies that served more than 100 people. This describes the access to safe drinking-water for 4.1 million New Zealanders (83%) (Ministry of Health 2020).

References

Ministry of Health. 2020. *Annual report on drinking water quality 2018-2019*. Wellington: Ministry of Health.

Smith, A H, Goycolea, M, Haque, R, & Biggs, M L. 1998. Marked increase in bladder and lung cancer mortality in a region of Northern Chile due to arsenic in drinking water. *American journal of epidemiology,* 147(7), 660-669.

Other related topics include:

Water-borne diseases related to drinking-water

Oral health of children

Access to fluoridated water

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Further information

For descriptive information about the data Metadata Sheet

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